Nuclear Waste Management and Environmental Justice in Taiwan

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I declare that this thesis is my own work and has not been submitted in substantially the same form for the award of a higher degree elsewhere.

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Abstract

This thesis examines environmental justice in the context of nuclear waste controversies on Orchid Island in Taiwan through the analysis of the differences between the Yami tribe and the Taiwanese migrants in their attitudes toward risks of the local nuclear waste repository and their understanding of the conception of environmental justice. The research methods adopted are focus groups research and archival analysis, supplemented by participant observation and interviews. The Orchid Island case reveals a far more intricate narrative than many of the existing literature on environmental justice, which often gives environmental justice a monodimensional interpretation and tends to view local community as homogenous. The Yami anti-nuclear waste movement manifests that problems of distribution inequity, lack of recognition and a limited participation in decision-making are interwoven in political and social processes, and disputes over nuclear waste problem between the Yami and Taiwanese groups also show the historical and socioeconomic complexity of environmental justice. The thesis concludes with the application of environmental pragmatism to environmental justice and nuclear waste dilemmas. Through a pragmatic approach, the Yami and Taiwanese environmental community could agree on ends or policies (e.g. a non-nuclear Taiwan, an improvement in monitoring the nuclear waste repository) without agreeing on ultimate values. It might help enhance mutual understanding and recognition, and facilitate intercultural alliance-building for dealing with nuclear waste problems.

Contents

Chapter 1 Introduction

Figure 1.1 Members of the Yami tribe from Orchid Island, wearing traditional
waistcoats and rattan helmets, performed an exorcism during an anti-
nuclear march.
Source: Taipei Times, 13/11/00.

Available at http:// www.taipeitimes.com/News/front/archives/2000/11/13/61135
(last accessed 25/05/04).

On 12 November 2000, tens of thousands of people marched in Taipei for a
'green island', appealing to the government to scrap the fourth nuclear power plant
project and to make Taiwan a nuclear-free country. Diverse participants, including
senior citizens, pregnant women, children, environmentalists, aboriginal groups and
foreign anti-nuclear activists and tourists attended the demonstration. Activists read a
joint statement in a variety of dialects, including Mandarin, Taiwanese, Hakka and
aboriginal languages. Among the crowds were Yami tribesmen from Orchid Island,
where Taiwan's nuclear waste repository is sited. The Yami were waving banners
proclaiming: 'No nuke, no waste'. Wearing traditional battle gear and helmets,[1]

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[1] Traditionally, the Yami men usually wear only a loincloth because of Orchid Island's tropical climate,
and sometimes a short, double-breasted waistcoat. No shoes or other clothing was worn. Due to
frequent contact with the Taiwanese society, modern clothing has been adopted. The traditional gear is
worn only on special occasions.

members of the Yami performed an exorcism during the anti-nuclear march.[2] This thesis uses the case of Orchid Island to explore how issues of environmental justice are played out in conditions of cultural diversity. What are the Yami fighting against? How do the Yami and Taiwanese people understand nuclear waste? Why is nuclear waste considered to be 'evil ghosts' by the Yami? What does environmental justice mean to them? Furthermore, are there any divisions within the Yami tribe as well as between the Yami and the Taiwanese people in a pluralistic society?

Research questions

Taiwan's rapid economic development and the advancement of modern technology have led to ecological threats through resource extraction, spreading toxic substances and hazardous waste facilities, constructing industrial complexes, and infrastructure extension. The controversies of nuclear waste management have intensified the tension of Taiwan's ethnic relations. Most Taiwanese low-level nuclear waste has been temporarily stored on Orchid Island, the homeland of the Yami aborigines. The Yami anti-nuclear waste movement emerged in 1987 when Taiwan transformed into a democracy. The state-run Taiwan Power Company (Taipower) has been seeking storage sites in Taiwan and abroad as well. However, local governments and residents had rejected the program of payment Taipower offered to local communities for accepting nuclear waste facilities. Taipower's contract with the North Korean government for exporting nuclear waste in 1997 has been met with strong opposition by South Korean environmental groups and raised international concern. Nowadays seeking a permanent nuclear waste storage site remains uncertain, but

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[2] Taipei Times, 13/11/00.
Available at http:// www.taipeitimes.com/News/front/archives/2000/11/13/61135 (last accessed 25/05/04).

Taipower's failure to keep its promise of removal by 2002 has led to grievances among the Yami tribe.

Nuclear waste management involves issues of equity over space and time (Blowers et al. 1991: 19; Kasperson, 1983). Nuclear waste is a potential threat to future generations as some has a half-life of 24,000 years and remains dangerous for more than 250,000 years (Shrader-Frechete, 1993: 1). Siting a nuclear waste facility involves distributional conflicts within present generations as well. According to Bullard (n. d.), it is a problem of geographic justice; those poor and unincorporated people and communities of colour tend to suffer a 'triple vulnerability' of hazardous or nuclear waste facility siting. The issues here are not simply about the distributional equity of nuclear benefits and burdens. O'Neill (2001: xxvii) argues that the question about equality involves not only different levels of access to external objects, but also issues of recognition, social relationships and power between groups, respect for the non-human world and future generations, etc. In general, the problem that the poor and indigenous peoples suffering disproportionately from environmental harms tends to entangle with the failure to recognize their worth and their exclusion from the decision-making processes (see Chapter 2).

Beck (1992: 36) argues that environmental risk has 'an *equalizing* effect', as problems such as nuclear disasters and acid rain have similar impacts on people of different classes. However, Beck's (1992: 36) argument about the democracy of risk has received some criticism. Goldblatt (1996: 178) claims that Beck overemphasizes the global and long-term effects of environmental risks, and neglects the threats posed by local incinerator or hazardous toxic wastes disposal facilities that residents in poor areas face. Bell (1998: 20) also argues that the distribution of environmental benefits and environmental costs is strikingly uneven. He claims that the well-to-do and well-

connected are generally in a better position to avoid the worst consequences of environmental problems, including global warming, sea-level rises, ozone depletion, desertification, loss of farmland to development and water shortages.

Much research on environmental justice shows that the politically and socio-economically disadvantaged are usually those who get a greater share of pollutants (Hofrichter, 1993; Szasz, 1994). Indigenous peoples are generally threatened with a variety of environmental injustices in the world. Examples include hazardous and nuclear waste issues in Native American communities (LaDuke, 1993: 99; Tarbell and Arquette, 2000); China's nuclear tests on the Uigur people's homeland;[3] the demand for more tropical rainforests from indigenous homelands of Brazilian Amazon (Hvalkof, 2000); conflicts in national parks and reserves established in indigenous peoples' territories (Momberg et al., 2000), and so on. There are also other emerging environmental justice issues in Taiwan. Chi (2001) argues that aboriginal tribes suffer the most environmental injustice induced by Taiwan's capitalist expansion policy. Conflicts between the indigenous communities and the national parks have become the main issues of existing Taiwanese research on environmental justice. For Chi (2001), three issues are most harmful to indigenous communities: a proposed dam construction on the Rukai tribe's homeland, three national parks on the historical indigenous lands and hunting ground, and nuclear waste facilities in the Yami tribe's homeland.

Instead of addressing environmental justice issues, related research discusses Taiwan's nuclear waste disputes from a variety of other perspectives in the last twenty years: the Yami tribe's anti-nuclear waste movement from the resource mobilization perspective (Huang, 1990); policy analysis of shipping nuclear waste to Orchid Island

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[3] World Information Service on Energy. China's nuclear tests.
Available at http://www.antenna.nl/wise/438/4335.html (last accessed 13/05/04).

(Wu, 1989); issues of public attitudes toward nuclear waste disposal, public education, communication and public acceptance (Atomic Energy Council, 1993, 1995); the situation of the Yami ethnic minority from Foucault's idea of heterotopia and bio-power (Wei, 1994); the use of Kenneth Burke's cluster criticism and a rhetorical perspective to explore the worldview and values hierarchy behind the nuclear waste issues (Hung, 1998); the historical analysis of the development of nuclear waste policy and social issues (Chang, 1998).

The disputes over low-level nuclear waste management are central to this thesis. There are two categories of nuclear waste in Taiwan: high-level nuclear waste (mainly spent fuel) and low-level nuclear waste, which is different the three broad classifications used in Britain and some other countries: high-level, intermediate-level and low-level nuclear wastes. Spent fuel, highly dangerous, is temporarily stored in the pools of the current three nuclear power plants. The second classification is low-level nuclear waste – lightly contaminated materials, such as clothes, laboratory and medical equipment, plastics, gloves. Similar to America, Taipower classifies what in other countries are called intermediate-level waste as low-level nuclear waste. It includes nuclear waste from processes related to energy production, such as control rods, filter, sludge, and resins (Taiwan Power Company, 2001: 3). In 1986, Taipower drew up an overall plan for the ultimate disposal of spent nuclear fuel. It stresses that for spent fuel interim storage for 40 years or longer is required to provide sufficient time evaluating feasible options and implementing the final disposal plan, that a final spent fuel disposal site will be chosen by 2016, and that the facility will become operational in 2032. As to those low-level wastes currently stored on the interim Orchid Island repository, Taipower stresses that it has to be permanently disposed of in a safe manner (Atomic Energy Council, 2003). It shows that seeking a permanent

low-level nuclear waste storage site is Taipower's primary task at present. However, as previously mentioned, it has experienced setbacks and generated the Yami's anti-nuclear waste movement.

This thesis aims to contribute to environmental justice discourses surrounding the disputes over nuclear waste management. Disproportionate exposure to environmental risks among ethnic minority and poorer communities has been the most serious concern for environmental justice advocates. However, environmental justice is often given a single-dimensional interpretation. In order to broaden the current understandings of environmental justice issues and its complexity, I attempt to explore the perspectives of local residents on Orchid Island who face the direct threats posed by the nuclear waste repository, and to examine their framing of environmental justice issues and radiation risks. Existing research on the disputes over nuclear waste tends to focus on the Yami tribe, while the opinions of the Taiwanese migrants on Orchid Island and those Yami who are working for Taipower have been ignored. These Taiwanese migrants and the Yami Taipower employees as members of the local community could provide different insights into the conception of environmental justice and nuclear waste dilemmas. Initially, there are three main research questions addressed in this thesis, and the analysis of fieldwork data raises a fourth question:

1. What are the differences between the Yami and the Taiwanese in their attitudes toward the nuclear waste repository and its associated risks?
2. How do the Yami tribesmen and the Taiwanese migrants on Orchid Island understand the conception of environmental justice surrounding the disputes over the nuclear waste repository?

3. What are the implications of the opinions of the Yami and Taiwanese for nuclear waste dilemmas and policy?

4. How can we respond to the multiple ways of understanding environmental justice and deal with the divisions within a pluralistic society as to nuclear waste disputes?

For the first question, the thesis explores how the Yami and Taiwanese residents view the impacts of the nuclear waste repository on the environment, human health and future generations, the relevant factors in shaping risk perception and the differences between them. It includes the discussion on the framing of risk issues, the dilemmas of siting decisions, and public attitudes toward the huge amounts of compensation offered by Taipower. Secondly, the existing environmental justice research mainly draws on the environmental conflicts in Western countries. The East Asian perspective on problems that involves distribution of environmental 'goods' and 'bads' are under represented. I attempt to provide a contextualized example that offers understanding of the conception of environmental justice grounded in a particular context and experience through the disputes over radiation risks and related concerns. For the third question, I explore the disputes over democratic procedures, issues of recognition and just distribution from the perspectives of the Yami and Taiwanese residents, and discuss their implications for public policy. For the final one, the data collected from the focus groups showed the divisions between the Yami and Taiwanese groups and their multiple understanding of environmental justice. I explore possible methods that might help to defuse the tension between groups with differences, and discuss what environmental justice can do for the Orchid Island case.

The detailed synopsis of the thesis is as follows. The latter part of Chapter 1 introduces Taiwan's transition to democracy, the diversity of Taiwan's ethnic groups, and the development of the anti-nuclear movement that led to the change of nuclear policy from the expansion of nuclear energy to the goal of a non-nuclear country. It argues that nuclear waste management needs to address environmental justice issues, because of the domestic, international and intergenerational dilemmas created by the problems about where to locate the nuclear waste repository .

Chapter 2 provides critical reviews of environmental justice discourses that offer a basis for further theoretical and practical evolution. It discusses the conception of environmental justice that connects environmental issues with justice claims, and its multiple dimensions. Instead of solely focusing on the distributive dimension of environmental justice, issues of recognition and the procedural or participatory dimension of environmental justice are also examined. It introduces a pluralistic notion of environmental justice and ethical pluralism, explored further in chapter 7.

Chapter 3 provides the research context and methodology employed in this thesis. It begins with the reviews of the social and economic background of Orchid Island and how the traditional self-sufficient society is now undergoing great changes due to the impact of market-based economy and tourist industry. It explores the ecological themes in the Yami and Taiwanese worldviews, including the blend of traditional Yami religion with Christianity, and the Confucianism, Taoism and Buddhism that are central to Taiwanese worldviews. It introduces key Chinese terms that are given particular interpretations different from the way used in the West. The main research methods adopted here are archival analysis and focus group methods, supplemented by interviews and participant observation. I discuss the inadequacy of currently dominant research approaches on public attitudes toward nuclear risk, and the problem

of using quantitative research on environmental justice issues. I explain the reasons for using focus group methods to explore public feelings and opinions, and how the focus groups were conducted on Orchid Island.

The key research findings are examined in Chapter 4, 5 and 6. Chapter 4 details the differences between the Yami and Taiwanese groups surrounding the controversies over the nuclear waste repository, including the impact of the nuclear waste repository on Orchid Island, the issue of disproportionate risk suffered by the Yami tribe, the framing of risk issues and the siting disputes. Issues of information and trust that affect public perception of nuclear waste are discussed. The compensation provided by Taipower has played an important role in the local economy and welfare. It explores the Yami and Taiwanese perspectives on the compensation, possible better ways of using the compensation, and the implications for existing discourse on the conception of compensation.

Chapter 5 discusses issues of democratic procedures, recognition and just distribution, and reveals how these problems are linked. It examines the Yami and Taiwanese groups' opinions on who should make the decision, the role of the public, and the way to improve the decision-making process. It discusses the question as to whether deliberative democracy is biased against disadvantaged groups based on the empirical study. It explores the disputes over the naming of the Yami tribe and of landscape features of Orchid Island, and shows how nuclear waste controversies intersects with the Yami's demands for aboriginal autonomy.

Chapter 6 provides how the Yami and Taiwanese groups understand the idea of environmental justice. It shows the multiple conceptions of environmental justice, including the idea of the good life, duty, rights to life, utilitarianism, fairness, democratic procedures and social morality. The Yami and Taiwanese groups'

understanding of environmental justice have some common features, such as preserving the environment from pollution and the idea of responsibility, but there are competing interpretations surrounding the disputes over nuclear waste management. It further explores the barriers to the formation of coalitions for environmental justice between the Yami and Taiwanese people and the emerging networking of indigenous peoples.

Chapter 7 focuses on rethinking the multiple conceptions of environmental justice articulated by the Yami and Taiwanese groups. I introduce environmental pragmatism and illustrate its potential for defusing conflicts between groups with difference and bringing people together to have a conversation. I also discuss issues of group boundaries and recognition of difference from a pragmatic perspective, and argue for the reconstruction of a broader community. It argues for notions of environmental justice in a pluralist and pragmatic fashion, and that intercultural dialogue between a variety of environmental communities might facilitate intercultural alliance-building for dealing with nuclear waste problems.

Chapter 8 concludes the research with a discussion of major findings, including the implication for environmental justice discourses, the policy implication for nuclear waste management, and the argument for the possible transformation of the Yami and Taiwanese individuals, community and government institutions through engaging in intercultural dialogue over environmental justice and alliance-building for dealing with nuclear waste problems. Finally, the limitations of this thesis are discussed along with suggestions for future research.

The transition to democracy

This section sketches democratization and social change in post-war Taiwan. In the late 1940s, the Chinese communists launched a civil war on the mainland and eventually founded the 'People's Republic of China' (PRC) in 1949, which forced the government of the 'Republic of China' (ROC) to relocate to Taiwan. The Beijing government recognizes Taiwan as a runaway 'province' and has consistently insisted that China will attack Taiwan if Taiwan declares independence, encounters large-scale turmoil, develops nuclear weapons or if a foreign power intervenes in Taiwan's internal affairs (Chiu, 1999: 51-60). The Crisis of Taiwan Strait in 1996 during the first popular presidential election period reflects China's threat to Taiwan.[4] Hence the issues of national security and political stability have long occupied the government. The economic transition, including exportism, innovation-driven growth, and the knowledge-based economy, also involves the consideration of Taiwan's capability for defence and to acquire advanced military arms.

Hsiao (1990: 164-6) distinguishes three periods to portray the changes of power relations in Taiwan context after the civil war. He calls the first period 'political forces in absolute command' from 1947 to 1962. Political survival of the party-military state was the main consideration that economic rehabilitation and stability were given high priority. The second period is 'economic forces in relative command' from 1963 to 1978. The Kuomintang (KMT, literally Chinese Nationalist Party) government incorporated economic growth into its priority agenda during this period and political forces formed coalitions with economic forces to accelerate capitalist development. The previously coerced civil society made some 'root-seeking' efforts to redefine the

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[4] China's missiles flew over the middle line of the Taiwan Strait to warn against any ambition of Taiwan's formal declaration of independence in 1996. The American government sent two aircraft carriers to waters near the Taiwan Strait in response to the crisis, which is the largest show of military

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nature of Taiwan social reality, reflected in the indigenization of literature and music. The emerging of 'Taiwan consciousness' was confined to the intellectuals instead of wider social groups. The third period is 'social forces in mobilization' (since 1979). Economic development in the previous phase nurtured civil society with increased resources to make claims on the state for greater autonomy. The organized movements of the 1980s sought not only the reform of specific public policy but also the transformation in the power relations between 'the authoritarian state' and the 'mobilizing civil society'.

The emerging force of the external party in the late 1970s is a crucial milestone of Taiwan's democratization, especially the Formosa Incident. The publication of the journal 'Formosa' represented the great unity of the external party movement in 1970s, with an attempt to establish an opposition party. On 13 December 1979, the KMT government began to arrest large numbers of external party personages related to 'Formosa' for their 'over-agitated'opinions and accused them of rebellion against the government. Under the pressure of public voices requesting the trial to be more public, the government made an exception by allowing auditing by journalists, families of suspects and social personages. The defendants and their solicitors talked openly about democratic values and freedom of opinion, including the incumbent President Chen Shui-Bian (solicitor) and Vice President Annette Lu (the defendant). This incident had planted important seeds of democracy in Taiwan.[5] Most of the members of 'Formosa' established the Democratic Progressive Party (DPP) afterwards, Taiwan's first opposition party (now the ruling party).

The plural social movements that emerged in the 1980s include protests against inadequate policies in caring for disadvantaged groups and ethnic groups, challenges

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force in the Pacific Rim since the end of the Korean War (Chuang, 2001: 53).

to the mode of control over key social groups such as workers, women and teachers, and new demands for consumer protection and pollution control, which accelerated the state's move to transform and to lift the martial law decree in July 1987 (Hsiao, 1990: 167-77). The end of martial law stimulated social movements to flourish without external constraints, and the KMT government continued the reform process, including the legalization of the opposition parties, the lifting of press restrictions, constitution amendments, regular parliamentary elections, and the direct election of the president.

Taiwan has completed the transition to democracy; however, the past authoritarian regime era has left us with the trauma of the Taiwanese-Mainlander conflict, and the gap between the aboriginal minority and the Han people. The next section introduces the diversity of ethnic groups that plays an important role in Taiwan's politics and involves the problem of Taiwanese identity.

The diversity of Taiwan's ethnic groups

Taiwan represents a modern society with a multifaceted culture. It is generally agreed that there are mainly four major ethnic groups in Taiwan: Indigenous Peoples (2 %), Mainlanders (13 %), Hakkas (15 %), and Holos (70%). Indigenous Peoples are descendents of Taiwan's earliest inhabitants coming mainly from southern China and Austronesia.[6] In the 16th century, the Han people from China's coastal provinces of Fujian and Guangdong began immigrating to Taiwan, and they are ancestors of Hakkas and Holos. Mainlanders (meaning people from other provinces) designates descendants of those followers of the late Generalissimo Chiang Kai-shek, who

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[5] The verdict of Kaohsiung Incident (1980). Chinese-language version available at http://formosa.yam.org.tw/document1.asp?ID=800117106 (last accessed 04/06/04).
[6] In general, Australoid settlements were mainly in southern Taiwan and along the eastern coast, while

together with his disciples and about two million refugees originally from various provinces fled to Taiwan after their defeat by the Chinese Communists in 1949. It brought a new influx of Han immigrants to Taiwan. Owing to differences in ethnicity, language, historical experience and national identity, ethnic cleavages have so far manifested themselves in the form of clan feuds, electoral competitions and power struggles, not only between the Han and the Indigenous Peoples but also among the Han (Shih, 2002).

In the broader sense, Taiwanese denotes all citizens or residents in Taiwan. However, the academic usage of the term Taiwanese is much narrower when discussing issues of national identity, which designates the native Taiwanese (the Hoklos, Hakkas, and the aborigines) whose ancestors immigrated to Taiwan centuries ago before the Japanese occupied in 1895. It excludes the Mainlanders (Shih, 2001). The usage of Taiwanese in this thesis includes Mainlander, Holos and Hakka because I am interested in the differences between the Han and the indigenous peoples, and the nuclear waste controversy involves the conflicts between the Yami tribe and the government dominated by the Han people. Mainlanders, Hakkas and Holos share the Han identity and have a similar sense of cultural or racial superiority over the Indigenous Peoples. Before the discussion of the Indigenous Peoples, I first introduce the particular historical experience of the ethnic groups and sources of tension between them.

The end of World War II led to the collapse of Japanese 50-year colonization. Taiwan was handed over to KMT government in China according to the Cairo Declaration. The first troops sent to take over Taiwan were undisciplined and corrupt, while the major KMT troops remained on the Chinese mainland fighting the communist rebellion. Bad administration, a depressed economy and shortages of daily

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early settlers from southern China settled in northern and central Taiwan.

shortages angered the native Taiwanese. It resulted in one of Taiwan's greatest tragedies, the February 28 Incident (Chuang, 2001: 55). In 1947, the KMT government's bloody massacre against local Taiwanese claimed thousands of lives (most of them Holos). The bloody repression of 1947-50 and then the 'white terror'[7] of the 1950s brought society under KMT's total control (Castells, 2000: 267). The DPP party dominated by the Holos then emerged against the mainlander-controlled KMT regime. However, the Hakka has taken no stand in the early process of political struggles. In the late 1980s, they asked both political parties to enhance the Hakka's social and political recognition and demanded an increased Hakka language program in the public media and schools.[8]

The ethnic groups have different degrees of sentimental attachment to Taiwan and China, and diverse memories of Japanese colonialism. According to Chuang (2001: 56), the KMT government's takeover and the Taiwanese resistance reflect 'a process of fighting for identity in which nationality, culture, and tradition were called into question.' During the period from 1918 to 1937, compulsory Japanese education and cultural assimilation were emphasized. Taiwanese residents (Hakkas, Holos and Indigenous Peoples) were forced to adopt Japanese names and wear Japanese-style clothing, as traditional customs and dialects were discouraged. People were taught to see themselves as Japanese instead of Chinese (Government Information Office, 2003). Different from Hakkas, Holos and other indigenous tribes, the Yami on Orchid Island became the field-site for Japanese anthropologists because of its unique culture (see Chapter 3).

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[7] During the martial law era (1947-1987), the government's intervention in civil rights was not forbidden because the superiority of 'national security' was seen as outweighing other forms of civilian freedom.
[8] Hakka Right Movement successfully led to the establishment of the Cabinet-level Council of the Hakka Affairs in 2001 to promote the Hakka culture.

According to Shih (2002), one's ethnic identity (Native Taiwanese or Mainlander) would largely decide one's national identity (Taiwanese or Chinese diaspora) and one's attitudes toward Taiwan's relation with China (Independence or Unification). But now more Mainlanders account themselves as Taiwanese as well as Chinese. As one KMT official puts it during the presidential election period this year, 'we feel Taiwanese. Our camp used to oppose sovereignty and reform, but not now.'[9] Mandarin is the official language and promoted through the educational system. Common Han dialects include Taiwanese and Hakka, spoken mainly by Holos and Hakkas, while indigenous peoples speak the Austronesian languages.[10] The lifting of martial law and social pluralization bring a growing emphasis on teaching students their mother tongue and on preserving the languages and dialects of smaller ethnic groups.

There are currently twelve major indigenous tribes in the Taiwan area (see Figure 1.2): the Ami, Atayal, Bunun, Kavalan, Paiwan, Puyuma, Rukai, Saisiyat, Thao, Truku, Tsou, and Yami (also known as the Tao, meaning 'people' in their mother language). The Ami account for over one third of the indigenous population, while the Yami is the smallest group.

[9] The Guardian, 19/03/04, p. 17.
[10] The Austronesian linguistic family extends from Madagascar to Easter Island and Hawaii, from Taiwan to New Zealand.

Distribution of the Indigenous Peoples

Saisiyat
Atayal and Truku
Amis
Bunun
Tsou
Pinuyumayan
Rukai
Paiwan
Yami
Thao
Kasalan

Orchid Island

Source: Council of Indigenous Peoples
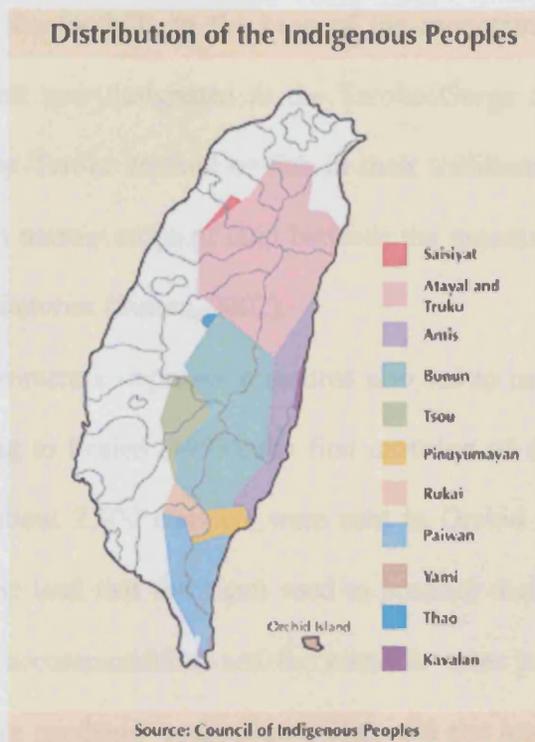
Figure 1.2 Distribution of Taiwan's indigenous peoples
Source: Government Information Office, Taiwan.
Taiwan Yearbook 2004. Available at
http://www.gio.gov.tw/taiwan-website/5-
gp/yearbook/P021.htm#1 (last accessed 14/09/04).

It could be viewed as a change from one colonial regime to another for indigenous peoples when Taiwan transferred to the KMT government in 1949 (Chiu, 1999). Many indigenous people live in mountainous reservations, which cannot be sold to non-aborigines. But mountain reserved lands have been encroached upon by multiple purposes of civil, military and private development. Furthermore, traditional methods of subsistence, such as hunting, fishing and slash-and-burn agriculture, were banned in all the areas designated as national parks (Allio, 1998). The Taroko people (Truku) who live along the mountainous coastline in eastern Taiwan are a good example. They were once a hunting and gathering people which ruled over large hunting lands. From 1895 to 1945, the Japanese government built up a timber industry and forcibly relocated the Taroko to the foothills of the mountains. The Taroko were

then relocated from the foothills to the base of the mountains by the KMT. The forested mountains are now designated as the Taroko Gorge National Park, and it become illegal for the Taroko to hunt or fish in their traditional territory. They are now forced to live on narrow strips of land between the mountains and the sea, near cement quarries and factories (Simon, 2002).

The KMT government's improper measures also led to negative effects on the Yami tribe. According to Feaien (1995), the first intrusion of the KMT government was in 1958 when about 2,500 convicts were sent to Orchid Island to serve their sentences. Parts of the land that the Yami used to produce their main crop and taro were taken to build accommodation, and the convicts were permitted to roam the island, often smashing residents' possessions. They did not leave until 1979. In the 1960s, the island's natural resources suffered serious changes as the Forestry Bureau cut down the tropical forest, destroying the habitat of many rare species of plants and animals. On the other hand, schools were established in the tribal areas to teach Han Chinese culture, history and language, in order to assimilate the Yami. The KMT policy is similar to the term 'civilizing project' used by Harrell (1995: 4), which refers to one group's (in the civilizing centre) claim to a superior degree of civilization and the effort to raise the other groups' (the peripheral peoples) civilization to the level of the centre. Here is a significant example. A lot of traditional Yami semi-underground stone houses[11] (cool and invulnerable to typhoons in summer, and warm in winter, see Appendix III for photos of Orchid Island) were seen as 'uncivilized' and replaced by the concrete block houses during 1966-1980 under the policy to improve the life of indigenous peoples (Feaien, 1995).

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[11] The traditional houses remain in large numbers only in two villages on Orchid Island: Langdao and Yeyin.

Since the 1980s, a group of young aborigines who had been educated in Taipei stared to advocate legal and social rights for the indigenous peoples. The Alliance of Taiwan Aborigines founded in 1984 has lobbied and mobilized protests on a variety of issues, including political status, cultural education, land rights, the use of indigenous names rather than the imposed Chinese names given to them, and demeaning comments about aborigines in primary school textbooks (Kingsbury, 1999: 363). For example, the Taroko people participated in a protest against the Taroko National Park in 1994 and shouted 'anti-oppression, fighting for survival rights, return our land to us' (Chi, 2001: 148). The Yami also expressed their objection against the proposal to set up a national park on Orchid Island as it will affect their traditional way of life and limit their economic activity.

This section showed the complexity of issues raised by the dynamic processes of social interaction among the diverse ethnic groups, especially the confrontation between the Han and the indigenous peoples. The indigenous peoples continue to struggle to make their claims heard.

Nuclear policy and the anti-nuclear movement

Since the 1960s, Taiwan's rapid industrialization has caused a continuous increase in the demand for energy and the percentage of the imported energy has been increasing year by year. In the early 1970s, the government carried out 'Ten Major Infrastructure Projects' (1970-1979)[12] and nuclear power stations were one of the important construction projects. The development of infrastructure and heavy industry has accelerated economic growth. The worldwide inflation and depression caused by

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[12] They are the Chinese Shipyard, a Steel-making Factory, the Petrochemical Industry, the South-North Motorway, Taichung Port, the North Rotate Railway, Suao Port, Railway Electrification, Chiang Kai-Shek Airport, and Nuclear Power Stations.

the Middle East War in 1973 led to the policy of developing nuclear energy to maintain a stable energy supply and continuous economic growth. Taipower signed the contract with the American reactor supplier with their technological assistance. The first nuclear power plant in Chinshan, Taipei County, was started to be constructed in 1971 and run commercially in December 1978, and was considered to be the solution to energy crisis and the symbol of the development of high technology and the force of the country. The No.2 and No.3 nuclear power plants started to run in 1981 and 1984.

The decision to develop nuclear energy and the construction of the three nuclear power plants did not cause local residents' opposition or the public suspicion of potential risks. The top-down decision-making model during the martial law era was seen as bringing efficiency, political stability and rapid economic development. People became passive recipients without doubting the legitimacy under the propaganda of 'national benefits'. On the other hand, any objection to the already decided nuclear policy would be met with coercion and the public media was subjected to restriction under authoritarian control.

The Atomic Energy Council approved Tapower's proposal for a fourth nuclear power plant in Yenliao in 1980. But the decline in the demand for energy caused by the global depression delayed the execution of the scheme. In 1985, a debate on whether or not the already planned fourth plant should be constructed among Taipower officials, environmentalists and scholars established an anti-nuclear mood in the minds of the public (Hsiao, 1990: 176). In order to avoid the expected conflicts, the Executive Yuan started to strengthen communication with the public to quell their suspicions before the program's proceeding. However, the Chernobyl accident happened in the following year; the Legislature temporarily froze the budget of the

program of constructing further nuclear power plants under strong pressure from the media and public doubts about nuclear safety.

Local residents near the fourth nuclear power plant site organized an Anti-Fourth Nuclear Power Plant Association in 1988 with support from environmental activists. The resistance was growing among local residents and environmental groups. The controversy became a crucial national issue and a major point of confrontation between the ruling party and the opposition. A variety of social forces were mobilized to influence the decision-making process and made their claims heard.

Demonstrations or protest marches is the most common and direct way for Taiwanese people to express their opinion. In 1989, crowds led by the Taiwan Environmental Protection Union and other civilian groups demonstrated in Taipower headquarters and the Ministry of Economic Affairs to express their objection to the nuclear power plant scheme. The action influenced public opinion and won considerable support through the mass media. Many people also signed the statement supporting the anti-nuclear movement. A series of protest march organized by the anti-nuclear organization have taken place since the 1990s, advocating 'Save Energy, Say Goodbye to Nuclear Energy', 'A Non-Nuclear Homeland', and 'No Nuke, Living in Taiwan Safely'.[13]

The anti-nuclear groups asked for a referendum to let the public decide the fate of the fourth nuclear power plant on the basis that the decision and nuclear safety would have crucial influences on people's lives. In fact, a small-scale public ballot was held in the 1990s. It shows that 96% of local residents in Yenliao are against the power plant in their town. Taipei County, the jurisdiction over Yemliao, held a public ballot as well and 89% of voters opposed the scheme. Taipei City held a nuclear public vote

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[13] Taiwan Watch Institute. No Nuke: the major events. Formerly available at http://www.taiwanwatch.orh.tw/lufly/nonuke/story.htm (last accessed 20/08/01).

on the presidential Election Day in 1996 with a 60% voting rate and over half of them voted against the plant. Another public vote was held in Yilan County, near Yenliao, where 64% residents opposed the plant.[14] However, these public ballots on the nuclear plant organized by the local government have no legal base and are seen merely as opinion surveys. Nuke-4 Referendum Initiative Association was set up, advocating the public political rights of making decision by themselves and the duty to bear the burden of that decision.

In August 2001, the DDP government made a decision to resume constructing the already designed plant under the pressure of the legislature dominated by the KMT party, which angered environmental and social groups and local residents. For the government officials, the decision to carry on with the designed No.4 nuclear power plant, and to reject resolving the dispute through a referendum, involved not only issues of safety and health, but also complex economic, political and social considerations. First, it involved the worry that the lasting political turmoil would cause political instability. The controversial nuclear plant had caused tension between the legislative and administrative divisions, which was considered to be a constitutional crisis. The constitutional court found the Executive Yuan's decision to put an end to the nuclear plant 'procedurally flawed' because the Legislative Yuan had approved the project and the budget committee unfrozen the budget of the scheme in 1992. The constitutional court urged the Executive Yuan to seek retroactive approval from the Legislature. The swinging nuclear policy also weakened people's confidence in the government, reflected in the bleak stock market during the tension between the legislative and administrative divisions. Secondly, the industrial sectors expressed their worry about a shortage of electricity if the construction of the fourth nuclear plant was scrapped without having an alternative electricity supply. The

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[14] Ibid.

Economic minister denied a looming electricity shortage and has preliminary decided to replace nuclear power with natural gas, but it could not avoid the concerns of an exodus of enterprises who feared a power shortage. Thirdly, political clashes on the issue caused astronomical financial loss for the government and taxpayers. If the contracts with US General Electric (GE) and other firms previously signed failed to be fulfilled, Taipower has to pay for the violation of the contract. Taipower needs to bear the responsibility for the delay of the expected completion date, and the lost sink-costs as the plant is partially constructed. Furthermore, a referendum takes time to get its legal or constitutional basis.

Although the anti-nuclear movement did not result in the withdrawal of the fourth nuclear power plant project, it has forced the government to modify its established nuclear policy, from Taipower's previous target of a total of twenty reactors by 2000, to the declaration of a non-nuclear Taiwan. The cabinet-level Non-Nuclear Homeland Promotion Committee was set up in October 2002. It plans to decommission the old nuclear power plants earlier than expected, develop renewable energy, promote electrical industry privatization and construct no more nuclear reactors. Huang (1999) emphasized that the ant-nuclear waste movement in Taiwan reflects people's claiming the right to a clean environment. As he puts it:

> [T]he anti-nuclear power movement have succeeded in making the right to a clean environment part of the political agenda in Taiwan, increasing the level of awareness of a fairly large portion of Taiwan's population. In the process, environmental activism has also contributed to securing the rights to free expression, assembly, and association, indirectly adding to impetus to Taiwan's democratization and the strengthening of civil society (Huang, 1999: 335).

The nuclear power plant will be closed at some point in the future; however, nuclear waste steadily accumulates and problems of the long-term management remain.

Dilemmas of nuclear waste management

As previously mentioned, nuclear waste will remains dangerous for thousands of years and would become a great burden to future generations. Nuclear waste management involves the question of who benefits and who bears the risks. I would like to use a time–space framework to explain how the questions of where the nuclear waste repository should go and how to deal with it have led to domestic, international and intergenerational dilemmas (Figure 1.3).

Nuclear power plants, the largest producers of nuclear waste, bring the benefits of electricity, but nuclear waste could pose a potential threat to the environment, human health and future generations. There is a concern about possible dangers or negative impacts on local communities hosting a nuclear waste repository or reprocessing plant (e.g. a chronic risk of radioactivity, possible catastrophic accidents). The neighbouring community or country close to the repository or reprocessing plant might have similar concern about risks, although public anxiety or perceived risks do not necessarily correspond to the distance from nuclear waste.

The domestic dilemma could expand to an international dilemma, including Taiwan's 1997 contract with North Korea for the shipment of nuclear waste, some countries' dependence on overseas reprocessing, a proposal regarding an Australian repository for imported high-level nuclear waste or for international (regional) nuclear dustbin. People of the country enjoying the benefits from the process of nuclear waste generation might continue to accumulate more nuclear waste, while the other country

importing nuclear waste would bear the burdens. The cooperation between the host country and users of the international or regional repository involves potential risks of transportation, terrorism and nuclear proliferation. It might cause negative impact on the neighbouring countries, and global safety and order would become uncertain as well.
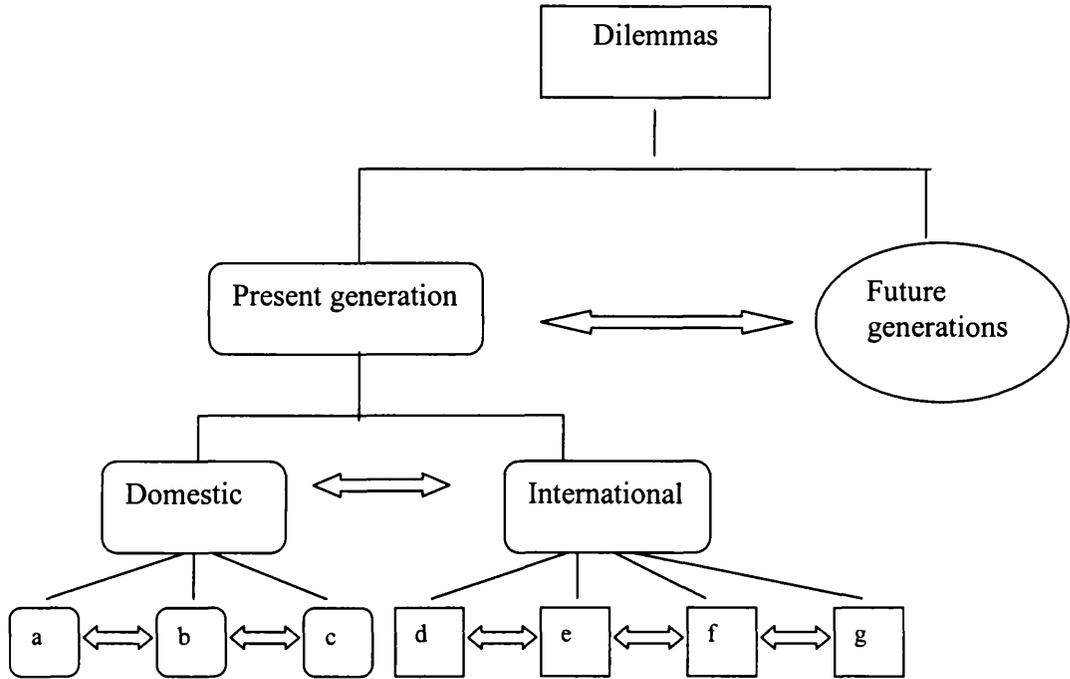
Figure 1.3 The dilemmas of nuclear waste management
Note:
a. Local community hosting a repository
b. Neighbouring communities
c. The majority of residents
d. Host country
e. Neighbouring countries
f. Users of regional repository
g. World citizens

Let us examine the domestic, international and intergenerational dilemmas of nuclear waste management and how these dilemmas entangle.

Domestic dilemma

Disproportionate radiation risk

90% of Taiwan's nuclear waste come from the three nuclear power plants, while very small amounts of nuclear waste are from industry, medical and research activities. Nuclear power plants share about 30% of electricity supplies, which is seen to help to maintain a stable energy supply and continuous economic growth after the first energy crisis, and bring Taiwan's political stability and national security. However, the nuclear power plant operation has led to the domestic dilemma of nuclear waste management, which involves issues of equal distribution. As previously mentioned, spent fuel is temporarily stored in the pools of each nuclear power plant, while most low-level nuclear waste has been stored on Orchid Island since 1982. The remote areas with low population density tend to be chosen as nuclear waste storage sites because it is seen as easier to get higher public acceptance and could minimize risks. Local residents around the three nuclear power plants usually pay more attention to the safety of nuclear power plant rather than nuclear waste storage. Issues of the risk of nuclear power plant operation and the argument for its closure are not the question this thesis addressed. Figure 1.4 shows that nuclear waste facilities are located in peripheral areas.
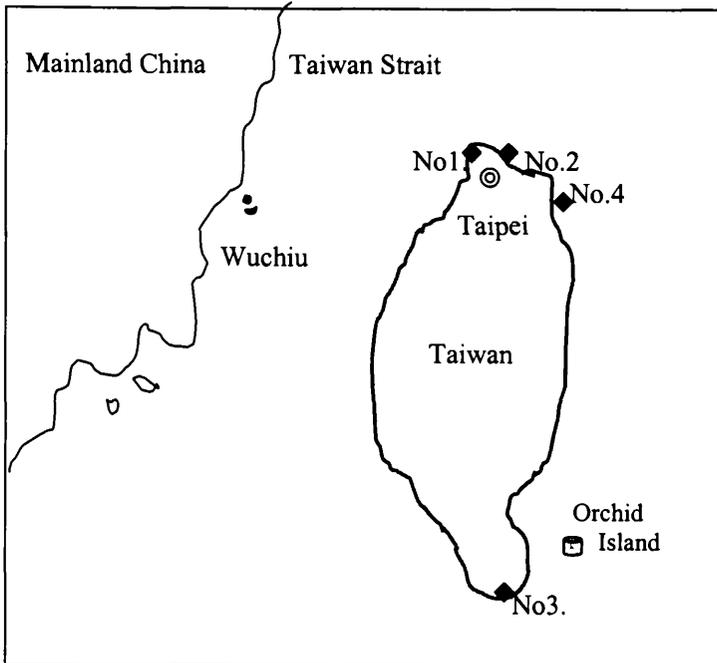
Figure 1.4 The distribution of nuclear waste facilities in Taiwan
Note:
a. Spent fuel is stored in the three nuclear power plants: No.1
   (1978~), No.2 (1981~) and No.3 (1984~). No.4 is under
   construction.
b. Low-level nuclear waste is stored on Orchid Island (1982~).
c. Wuchiu was chosen as one of the priority for permanent
   storage in 1998. It is close to Mainland China (about 10-20
   nautical miles).

Kasperson (1983: x-xi) argues that nuclear waste storage at particular sites is to

diffuse benefits to society at large but concentrated risks, which tends to 'put risks

disproportionately on rural, economically depressed, and politically powerless

peoples.' Hoffman (2001) also argues that the gap between the distribution of nuclear

costs and benefits is significant in the American context. He claims that the majority

of nuclear-generated electricity flows to customers east of the Mississippi. But the

adverse impacts are largely experienced by residents of the Indian community, and the

compensation offered by the U.S. government is simply incommensurate with the

damages (p. 463).

The nuclear waste repository on Orchid Island (see Appendix III for photos of Orchid Island) has caused disproportionately adverse impacts on the Yami tribe (see Chapter 4), although no evident of obvious negative impact on the Yami health and the environment of Orchid Island related to the nuclear waste repository has been found (Taiwan Power Company, 1997, 2002). The decision to set up an interim nuclear waste repository on Orchid Island was made in the late 1970s. The site selection process was dominated by the Atomic Energy Council, which was hidden and privileged access for technocrats without consulting the public. Such authoritarian governance and closed policy-making processes during the martial law period could make decisions efficiently, but it has led to Yami distrust and follow-up conflicts (see Chapter 4, 5 and 6). The rumours about a 'military harbour' or 'cannery' spread out when the special dock for shipment started to be constructed in 1976, because the Yami had no access to the information. To clarify the rumours and misunderstandings, government officials simply explained the selection criteria by document and emphasized that Orchid Island is the best choice for the repository from the perspective of experts (Hung, 1998: 13-14). On the other hand, there is research claiming that the Yami were told that the government was building a fish-canning factory for Orchid Islanders (e.g. Li et al., 1992; Wei, 1994).

The Yami's anti-nuclear waste movement, supported by Christian church and environmental groups and broader social groups, has forced Taipower to halt further shipments in 1996, and any plans of expansion of the Orchid Island dumping site were suspended. However, it caused the Yami to suspect that Taipower was trying to continue to ship nuclear waste to their homeland when the workers of Taipower were carrying out routine checks of the repository on Orchid Island in November 2000.[15]

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[15] United Daily News, 18/11/00. Stop nuclear waste: Orchid Islander besieges the harbor. Available at http://www.taiwanwatch.org.tw/issue/nuclear/news/NUKE4-10.htm (In Chinese)

The Yami also got Taipower's promise to remove the repository from their homeland by the end of 2002. In order to solve the siting dilemma of nuclear waste, Taipower has developed an incentive and compensation scheme, and a technical screening program.

Taipower's incentive and compensation scheme

Taipower has set up guidelines on the great financial benefits for local communities who are willing to host low-level nuclear waste storage facilities. Some remote and poor communities have voiced their interest at the early stage of the site selecting process, but no community has reached consensus to accept the storage facilities. Taipower's scheme is also known as a program searching for volunteer communities to accept nuclear waste, because volunteers have the opportunity to withdraw before their making the final decision. Similar measures have been adopted in other countries to solve their nuclear waste problems, such as Sweden, Canada, and Spain (Blowers, 2000).

Such a 'volunteer' program is problematic because it involves great financial incentives and people's anticipation of a reward, which is different from the action to donate blood or help the poor in the world. Instead, it seems to be a bargain, a monetary or material deal. Canada's experience is a good example. It happens that what a 'volunteer' community asks may be too high a price to pay, since the government has not been prepared to respond to community's requirement for employment (Blowers, 2000).

It reflects the complexity of the social dimension of the nuclear waste problem. There are some local government officials or legislators expressing their interest in Taipower's scheme, while local residents are strongly against the proposal. The

payment offered by Taipower will be used for local development or be distributed to local permanent residents. It happens that those who work and live in the big city and seldom go back to their remote hometown, their registered permanent residence, welcome the repository, because they will not suffer negative impact directly although they will get the compensation. However, the communities that express their willingness to host the repository are usually viewed as money-lovers, sacrificing the environment for the incentives. Those communities showing the interest in the program tended to experience pressure from local people, environmental groups and neighbouring villages after disclosure by the media, and then they gave up signing an agreement with Taipower (Atomic Energy Council, 2003).

The risk of nuclear waste cannot be smelt, touched or observed with the naked eye. The information asymmetry might cause poor communities to be driven by financial needs without knowing the potential risk or to accept nuclear waste under the poverty-stricken condition or the pressure of political power. Blowers et al. (1991: 21) argue that compensation is based on political expediency rather than ethical principles, and non-monetary incentives are required, such as independent monitoring, transparent information, public control over facility closure. The incentive scheme and issues of compensation would be regarded differently for local residents in particular contexts (see chapter 4).

Taipower's technical screening program

Taipower's technical screening program has been launched as no local communities have agreed to accept the intensive program of hosting a nuclear waste repository. Wuchiu, an isle off Mainland China's southeast province of Fujian, was selected as the priority candidate site for investigation in 1998 (see Figure 1.4). There

are other candidate sites on the list, including one small isle belong to Orchid Island, and towns of Taitung County in the rural areas of east coast (Taiwan Power Company, 2001: 8). It caused the Yami's resentment at Taipower's choosing their isle as one of the option; local residents in Taitung also protested against the project.[16] After the completion of the early environmental impact assessment in August 2001, Taipower and the government proposed to compensate households in Wuchiu and to ask them to move. Local residents in Wuchiu organised a petition against the project, held a demonstration and lobbied in order to try to influence public opinions and change Taipower's plan.[17]

People might argue that relocation could provide a solution to the dilemmas of siting the nuclear waste repository. However, Seley and Wolpert (1983: 80) argue that it would result in an inequitable impact on those who are forced to move because of the new nuclear waste facility. It may cause immeasurable psychological hardship even if the financial compensation is provided to a new home or business, especially for long-time residents and old people. Seley and Wolpert's argument provide resonance with the Yami case discussed in Chapter 4, 5 and 6.

Taipower would need to take China's position on this plan into consideration because Wuchiu is much closer to Mainland China than Taiwan. Although Taipower and the Taiwanese government can emphasize that the decision is legal and safe, no one could ensure that the government in Beijing would not use any means possible to stop the shipment. It might cause Chinese fishermen's opposition or the disputes over sovereignty as well. Such difficulty in seeking a domestic nuclear waste storage site leads to Taipower's eyeing the possible overseas alternatives. But the domestic dilemma could cause international disputes and generate another new dilemma.

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[16] Taipei Times, 01/05/03. Taitung protests nuclear dumping. Available at
http://www.taipeitimes.com/News/taiwan/archives/2003/05/01/204198 (last accessed 14/05/04)

International dilemma

The controversial nuclear waste can lead to an international dilemma. Considering the difficulty to find a suitable domestic site, Taiwan defines regional cooperation as an option – finding an overseas site to store low-level nuclear waste. Firstly, I discuss Taipower's 1997 contract with North Korea for the shipment of nuclear waste that has led to the conflicts between Taiwan and South Korea and aroused widespread concerns in North-East Asia. Although Taipower does not consider the reprocessing option for spent fuel at this stage, waste reprocessing plants could lead to similar international disputes in other countries. Second, I discuss neighbouring countries' campaigns against the Sellafield waste reprocessing plant for its adverse effects. Finally, I examine the disputes generated by the proposal of establishing an international repository.

Taipower's proposal to export nuclear waste abroad

For Taipower, North Korea, Russia, Mainland China and the Marshall Islands are seen as alternatives abroad for nuclear waste storage (Taiwan Power Company, 2001: 8), but the plan has so far not put into effect because it involves complicated international politics, technical problems, environmental concerns and ethical controversies. Russia and North Korea, in desperate need of revenue, have expressed their interests in this program, as Taipower will offer a comprehensive benefits packages for the host countries. In September 1996, a Taipower official announced that agreement had been reached with Russia on the shipment of nuclear waste to Russia's storage facilities. However, the agreement with Russia collapsed because the Russian parliament did not relax the environmental law restricting the treatment of

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[17] The China Post, 03/05/02. Available at http://www.chinapost.com.tw/ (last accessed 03/05/02).

foreign nuclear waste at that time.[18] In 2001, the Russian parliament (Duma) passed legislation to allow the import of spent nuclear fuel. The President Vladimir Putin signed this into law and set up a special commission to approve and oversee such imports. Environmentalists in Russia have voiced their opposition to the end of Russian's long-term ban on the import and nuclear waste. The Taiwanese activists are also strongly opposed to the shipment of nuclear waste to Russia and worry that it would create a notorious image for Taiwan in the international community.[19]

In 1997, news about Taipower's signed contract with the North Korean government for the shipment of nuclear waste caused public concerns and debate. Both the Taiwan and North-Korean governments alleged that the contract is a legal commercial action. However, it has caused South Korea's strong opposition. Environmental groups in South Korea protested outside the representative office of Taiwan in Seoul, while some environmental activists came to Taipei to express their concern about the contract. Four parliamentarians regarded the nuclear contract as immoral and brought Taiwan a protest letter signed by 165 South Korean government officials. South Korean environmental activists' five-day hunger strike outside the headquarters of Taipower and their burning of a portrait of Taiwan President Lee Teng-hui angered Taipower union members, the Patriotic Union and the Taiwanese public. Taipower emphasized that South Koreans should not interfere in others' affairs, while the immigration authorities have asked those protesters leave Taiwan (Schafferer, 2001: 109).

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[18] The China Post, 02/02/01. ROC aims to ship nuclear waste to Russia; The China Post, 22/12/00. Russian lawmakers strongly back importing nuclear waste. Available at http://www.chinapost.com.tw/ (last accessed 02/02/01).
[19] Taipei Times, 07/03/01. Radioactive waste may go to Russia. Available at http://www.taipeitimes.com/News/front/archives/2001/07/13/93911 (last accessed 20/07/04); Taipei Times, 21/02/01. Russians ponder specter of nuclear waste imports. Available at http://www.taipeitimes.com/News/local/archives/2001/02/21/74556 (last accessed 20/07/04).

South Korea also appealed to the International Atomic Energy Agency (IAEA) and America to force Taiwan to cancel the plan and requested North Korea to stop the contract to import the nuclear waste. However, IAEA points out that it is two countries' commercial behavior and IAEA would not intervene in this event because Taiwan and North Korea are not IAEA members. What IAEA can do is to check whether North-Korea has the technology to deal with nuclear waste, but any inspection would have to get North Korea's consent. For America, it would not be a problem if the contract follows IAEA regulations and has no relation with nuclear proliferation. Neighbouring countries have different reactions to this event. Japan are orally against the contract, while Mainland China expressed their opposition for their worry that Taiwan's problem would ruin China's relation with other countries and generates 'two Chinas' in the international arena. Finally, the contract between Taiwan and North Korea was dropped. Taipower alleged that North Korea's failure to reach the technical requirements is the primary obstacle to the cooperation, while South Korea, environmental groups and other countries putting pressure on Taiwan has been taken into consideration.[20]

It is reported that Taiwan Technical Consultants Inc, a non-profit organization, has negotiated with a research unit under Mainland China's Ministry of Nuclear Industry to dispose and store nuclear waste from Taipower's nuclear power plants. They have reached the agreement that nuclear waste from Taiwan might be placed at a deep storage centre at Guangdong, the southeast province of China. The program is seen as feasible technically, but there are many uncertainties in light of the current

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[20] The China Post, 20/02/02. Taiwan nuclear waste plan sparks protests in South Korea; The China Post, 25/02/01. PRC press N. Korea on possible ROC waste disposal. The China Post, 22/12/00. Russian lawmakers strongly back importing nuclear waste. Available at http://www.chinapost.com.tw/ (last accessed 25/02/01).

cross-strait political problems.[21] Unless Taiwan's current ban on direct shipping links with China is relaxed, nuclear waste bound for China would have to be shipped via a third country such as Macao, or Hong Kong. It increases the complexity of the program such as the costs and issues of shipping safety.

Exporting nuclear waste for storage may have great influence on the environment and public health of the host country, which also involves worry about the dangers of transporting nuclear waste. Taipower's deal with North Korea involves the issue of uneven distribution of benefits and costs, which means that people in North Korea do not enjoy the benefits from Taiwan's nuclear plant operation, but would need to shoulder nuclear waste burdens for several generations, in order to get short-term profits to improve their impoverishment. It reflects that economic reality could be in conflict with long-term environment safeguards. North Korean people might be affected by the decision made by the authoritarian government without the consideration of their voices. But the South Korean environmental campaigners (Green Korea) and the Taiwanese environmental groups (e.g. Taiwan Environmental Protection Union, Homemaker's Union and Foundation, Women Alliance, Green Formosa Front) did speak for people in North Korea. It reflected not only the consideration for the benefits of their own country or safety of transporting nuclear waste but also the defence of the Korean peninsula, ecological concerns and future generations.

Conflicts over reprocessing in the world

Reprocessing involves separation of unused uranium and plutonium from unusable waste so that unused uranium and plutonium can be used again for fresh fuel.

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[21] Taipei Times, 03/05/02. Officials confirm nuclear deal; Lawmakers warn against waste deal's hidden risks. Available at http://www.taipeitimes.com/News/taiwan/archives/2002/05/03/134366 (last accessed

According to Blowers (1996: 175), reprocessing spent nuclear fuel that gives rise to trade in hazardous materials has constituted an international problem, although reprocessing remains a matter of national policy. In Taiwan, a feasibility investigation on reprocessing was completed in 1991; however, this option will not implemented in the foreseeable future due mainly to economic and political concerns (Atomic Energy Council, 2003). The main nuclear countries which reprocess spent fuel include Britain, France, Japan and Germany. Spent nuclear fuel has long been sent from Japan, German, Switzerland and Sweden, etc. to the Sellafield nuclear site, on the northwest coast of Britain for reprocessing. It has become an international concern because reprocessing causes the threat of transporting hazardous spent fuel and environmental discharges, and increases the risks of global proliferation as any nuclear weapons program must either have a reprocessing plant or acquire reprocessed material.[22]

There is widespread concern about the safety of regularly transporting hazardous spent fuel to the reprocessing plant by lorry, rail and sea in the world and the return transport of the resulting high-level waste and plutonium. The Nordic countries, especially Iceland, and the Pacific countries have expressed strongest concerns about the safety of shipments, insurance liability and the need to review these current codes, including the restriction of ships from particularly sensitive sea areas and adequate emergency arrangements.[23] Moreover, it involves the worry about the reprocessing plant's impact on human health. It is believed that the reprocessing plant results in huge discharges of radiation into the sea and atmosphere which have been linked with childhood leukaemia. For example, the Irish Republic, which is closest to the

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13/05/04).
[22] N-Base Nuclear Information Service. (1999). Foreign nuclear waste in Britain. Formerly available at http://www.n-base.org.uk/public/foreign.htm (last accessed 10 /04/02). The Sellafield reprocessing plant is due to be decommissioned over the next ten year.
[23] N-Base Nuclear Information Service. Environmental dangers of nuclear transports. Formerly available at http://www.n-base.org.uk/public/trans.htm. (last accessed 10/4/02)

Sellafield plant, has been engaged in long-term protests for the sake of health. Neighbouring communities, like Norway, are also concerned about the effects of routine and accidental radioactive marine discharges on fishing.[24]

Reprocessing raises issues of inequality in the management of nuclear materials. Some environmental groups regard it as irresponsible and morally wrong that foreign countries send nuclear waste to Sellafield to avoid dealing with it at home, since a small volume of reprocessed foreign nuclear waste has been returned to the country of origin.[25] The operation of the reprocessing plant and the overseas contract that brings job opportunities and huge commercial interests to a very few countries have caused negative regional or international effects, and may let the nuclear power station continue to operation and produce more nuclear waste as the unused uranium and plutonium from reprocessing plant can be used again for fresh fuel.

The controversial international repository plan

Another controversial equity issue has been the idea of building an international repository. Some experts and the nuclear industry consider that one international or regional repository is safer than a great number of small repositories spread over the world because most high-level nuclear waste are accumulating at interim storage facilities that were not designed for long-term storage. They argue for the role of geologic disposal in preventing nuclear proliferation and the need to establish an international repository in a suitable site cooperatively to solve many countries' common nuclear waste problems (e.g. Stoll and McCombie, 2001; McCombie et al., 2001).

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[24] BBC News, 19/12/01. Available at
http://news.bbc.co.uk/hi/english/sci/tech/newsid_1719000/1719216.stm
[25] N-Base Nuclear Information Service. (1999). Foreign nuclear waste in Britain. Formerly available at
http://www.n-base.org.uk/public/foreign.htm (last accessed 10 /04/02).

The Pangea Resources has been operating since 1997 and developing the Pangea project that emphasizes high levels of safety and strict safeguards of international disposal of nuclear waste.[26] In fact, the Pangea project involves great economic profits or other forms of interest exchanges behind the cooperation, which might be at the expense of the local communities if the decision making process is dominated by small number of politicians and interest groups. The proposed international repository would not only affect the host country, but also the neighbouring countries and world citizens because it creates potential threat to countries along the route of shipping or a problem of global safety and order.

One of the crucial questions is where the world nuclear dump should be, as it might impose negative environmental, social and psychological impact on the host country. West and South Australia has been identified as the best place globally for the deep geological disposal since 1998, because of its ideal geological characteristics, stable democracy and high-technology ability.[27] Although the site for nuclear waste is usually sparsely populated, we still could find people who live close to it. Pangea has indicated two potential sites. One is in the shire of East Pilbara, where is close to a number of Aboriginal communities and the traditional homeland of the Martu (Western Desert) people. There are still significant numbers of people living in this area. The other possible area lies further south, in the Eastern Goldfields region not far from the Cosmo Newberry Aboriginal reserve. This is the home of the Bidjandjadjara people, who have a high level of awareness and opposition to the Pangea proposal.

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[26] British Nuclear Fuels Limited (BNFL) has invested large money in Pangea. Other investors in the project are made up of Swiss and American interests. Pangea: A Global Solution for the Disposal of Nuclear Materials. Available at http://www.pangea-international.com/proposal.htm.(last accessed 12/05/04).
[27] In the initial survey, Australia, Southern Argentina, Southern Africa and West China were found to have suitable topography and saline immobile groundwater. Available at http://members.iinet.net.au/~conswa/gtimes/previous/mar99/mar99_3.html (last accessed 10/6/02).

People in Australia are anxious that both state and federal governments will be tempted by economic benefits, though they have said no to the proposal initially.[28]

The Pangea plan's stress on its 'benefit of the host country and the world' seems to imply their seeking for the world's common good, providing a solution to countries that have difficulties in dealing with nuclear waste and reduce the risk of improper disposal of individual country. However, it involves issues of international inequity. The agreement between states and shareholders might be at the expense of the traditional way of life of the aboriginal communities in Australia. It might cause world citizens' doubts as to whether countries could cooperate to safeguard the international repository for a long period of time. Although the international treaty produced by International Atomic Energy Agency (IAEA) and signed by many nations in 1997 covering the management and disposal of spent fuel and high-level wastes requires that the host facility or system meets the highest national and international standards (Uranium Information Centre, 2003), the international regulations relating to the international transport of nuclear waste is not binding on states. For example, those states that are not members of IAEA are not required to follow IAEA's safety guidelines or codes relevant to the international transboundary movement of nuclear waste. Moreover, the international repository plan could lead to the user countries' generation of more nuclear waste because finding a site for nuclear waste facilities would not be a problem any more, which brings us to the problem of intergenerational inequity.

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[28] The Anti-Nuclear Alliance of Western Austral. Available at
http://www.anawa.org.au/waste/traditional.html (last accessed 12/05/04).

Intergenerational dilemma

What do we leave for future generations?

As previously mentioned, the threat of nuclear waste would last for thousands of years. Nuclear waste is seen as a 'legacy problem' that involves conflicting obligations between generations (Kasperson, 1983). Kasperson et al. (1983: 355) disagree with the claim that obligations exist only where individuals have rights and that only individuals who exist really have rights, and argue against people's consideration for existent people at the expense of people yet born. We can ask the question about what kind of legacy the present generation will leave them, though we could not exactly capture the values of distant future generations or what kind of society they would want to have.

The question posed here is: will future generations get any benefits from the processes of generating nuclear waste? Most nuclear waste is produced by civil and military power plants in the world and small amounts come from research, medical purpose and industry. Nuclear energy satisfies our needs for electricity and contributes to economic growth, while other applications also help to lead to technology innovation and medical progress. Future generations could benefit from the accumulating of social progress, wealth and advanced technology that brings them convenience and better living quality, though people have different ideas of the good life. On the other hand, Kasperson et al. (1983: 355) argue that the use for defence purposes in some countries could be seen as a major harm that exports to the future because weapons and proliferation threat might lead to world wars and disorder.

Secondly, nuclear power is viewed as a clean alternative energy source to reduce the emission of carbon dioxide from burning fossil because fossil fuel is associated with the catastrophe of global warming. But environmentalists argue that CO_2 is

emitted at each step of the nuclear fuel chain, from uranium mining, milling, enrichment, fuel fabrication, construction of the reactor, transportation and storage of radioactive waste, and decommissioning of old reactors.[29] It seems that nuclear energy itself could not provide a solution to global warming.

Thirdly, it is doubtful whether the coming generations could get reasonable compensation like those present populations who live near nuclear waste repositories. Although Taipower has set up a nuclear waste fund that the interest of the fund could be used for future compensation, it is uncertain whether the fund will be available in thousands of years. For example, there might be uncertainty associated with sovereignty transition and territory change because of natural disasters, war or other human factors. It is impossible to guarantee that the new government would provide financial and social support for local communities hosting nuclear waste storage facilities.

The discussion above showed that most benefits of nuclear fission are relatively short-lived, while substantial risks of nuclear waste or burdens are exported to distant generations (Kasperson et al., 1983: 359). There are significant uncertainties compounded by long time scales (Blowers et al., 1991: 21). Future generations will need to bear the long-term costs of monitoring and potential threat of radiation leakage to the environment and health.

Responsibility and Choices

The long-term nuclear waste management options involve the argument about the responsibility of present generation and the choices of future generations. Almond

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[29] Nuclear Information and Resource Service. Environmentalists oppose Bush-Cheney plan to revitalize nuclear power industry. Formerly available at http://www.n-base.org.uk/public/bish02.htm (last accessed 15/03/02).

(1995) argues that the principle of justice for future generations applying to environmental debate will be:

1. not closing down options for future generations (for example, by making irreversible changes, including the elimination of species, or the using up of resources) ;
2. maximizing future choices by making a considered judgement as to what are the most central, significant or important things to preserve and protect, for example, clear air, energy. (Almond, 1995: 18).

Some people advocate geological disposal of nuclear waste, permanently removing nuclear waste from the human environment, and regard it as the only feasible solution to fulfil our responsibilities to future generation without imposing on them unnecessary burdens (e.g. McCombie, 2001; Hill and Chapman, 2001). But such argument for geological disposal seems to contradict Almond's principle because it will close down future options. Instead, Shrader-Frechete (1993: 212) supports the current above-ground storage program, and argues that scientific uncertainties associated with permanent geological disposal are extreme because of the ten-thousand-year time frame. She doubts whether future generations could have opportunity to take effective remedial action when nuclear waste leaked some day. Shrader-Frechete (1993) further argues that the utilitarian goals, e.g. safety, avoiding terrorism and economic efficiency, are not for future generations. As she puts it, 'geological repositories represent, perhaps, the greatest good for the present number of persons, but not the greatest good for the greatest number of all persons, present and future.' 'We should postpone the question of geological disposal for at least a century and use monitored, retrievable, above ground storage of the waste until then,' she advocates.

The point here is that we need to balance the requirements of the responsibility of the present generation and the choices of future generations. We cannot give up in seeking a better way to deal with nuclear waste and let future generations have maximal choices to decide what to do. The responsibility for future generations is closely associated with the immediate safety problems of nuclear power plant operation, nuclear waste monitoring, and the health of the present generation. For example, the effect of the Chernobyl accident caused great negative impacts (e.g. radiation sickness, death, cancer and decrease in birthrate), and traces of radiation continue to be found in the soil of the affected area today. For Kasperson et al. (1983: 365), it is doubtful that just or socially acceptable solutions for nuclear wastes could be discovered if the conflict over nuclear power continues.

Lash and Urry (1994: 243) offer the notion of 'glacial time', which means that 'the relation between humans and nature is very long-term and evolutionary. It moves back out of immediate human history and forwards into a wholly unspecifiable future.' Inspired by Lash and Urry's idea of glacial time, Castells (1997: 125-126) argues that we need to reflect on our temporality and interaction between all forms of matter in an evolutionary perspective, and to measure our life by the life of our children and the following generations. Instead of thinking nuclear waste problems from a selfish and shortsighted perspective, we need to take the safety and benefits of our children and generations thousands of years from us into account. Although in reality environmental values are often in conflict with political considerations, national security, global order, economic interests, etc, the termination of nuclear waste production and leaving the smallest burden for future generations as possible are the keys to securing justice for future generations.

Conclusion

This chapter introduced research questions and the structure of this thesis, with a discussion of the emerging environmental justice issues in the Taiwan context and the disputes over nuclear waste management that has provided an important background for the research. It described Taiwan's political and social transition after the Second World War, from authoritarian governance to social pluralization and participatory democracy. Such political transformation enables the indigenous peoples to struggle for land rights, political status and recognition. The development of anti-nuclear movement has increased the public awareness of environmental issues, and forced the government to make changes to its energy policy and to declare the goal of a non-nuclear country.

It illustrates the complexity of nuclear waste management and the need to address environmental justice issues, as the problem of where to site nuclear waste facilities and how to deal with the waste create domestic, international and intergenerational dilemmas. The next chapter introduces the theoretical context of environmental justice as a possible way forward, both theoretically and practically.

Chapter 2 Discourses on environmental justice

There are a variety of understandings about the conception of environmental justice from both activists and academics. Although the literature on environmental justice tends to focus on the dimension of equitable distribution of environmental goods and bads, demands for democratic procedures, participation and recognition of difference are also at the heart of environmental justice activism. Issues of the respect for nature and the interconnected relationship between human and nature have been raised in the environmental justice movement as well.

This chapter aims to examine how the theoretical task of environmental justice based on an extension of social justice theory corresponds to a variety of concerns in the movement. Firstly, I review the development of the environmental justice movement and the discussion on environmental justice that provides the connection between environmental concerns and social justice. It includes a discussion about the particular conception of environment used, a variety of concerns in the movement, and various definitions of the term. Secondly, I discuss the distributive dimension of environmental justice. The third and fourth sections provide theoretical arguments against the limits of purely focusing on the distributive realm, and an exploration of justice in terms of the recognition of difference and procedural justice. It shows the link between problems of distributional inequity, lack of recognition and limited participation in decision-making. It includes a theoretical discussion on the concept of recognition in environmental justice discourses, and the procedural or participatory dimension. Finally, I introduce a pluralistic notion of environmental justice that encompasses broader concepts of justice and expanding recognition to nature. It concludes with suggestions for ethical pluralism (see Chapter 7 about environmental pragmatism).

Linking environment concerns and claims for justice

The environmental justice movement emerged in the American context as a combination of environmental activism and civil rights advocacy that links environment and race, class, gender, and social justice concerns in an explicit framework (Taylor, 2000). The 1980s struggle of Warren County, North Carolina, to resist the construction of a PCB landfill in the rural predominantly African-American community is commonly regarded as the catalyst for the environmental justice movement (Sandweiss, 1998: 31). Although similar struggles against the uneven exposure to environmental hazards in communities made up of people of colour and poorer areas can be found before 1980s, the event in Warren County has led to the increase of research on environmental justice and an upsurge in environmental activism in the minority communities.

The environmental justice movement formed by the alliance of grassroots and national environmental and civil rights activists challenges the dominant environmental movement primarily led by white upper- or middle-class people that often focuses on action to protect threatened forest and species, not human beings. Activists of environmental justice recognizes that society's most vulnerable groups have been damaged by environmental threats, such as farm-worker communities victimized by pesticides and Native-American tribes devastated by radioactive waste (Shrader-Frechette, 2002: 6). Environmental justice activists provide a broader concept of *environment,* and challenge the view of mainstream environmentalists and deep ecologists that nature is to be found only in areas remote from human activities, such as national parks and reserves, and endangered species and habitats. They redefine the conception of environment or nature to include 'where people live, work,

play, go to school, as well as how these things interact with the physical and natural world' (Bullard, n.d.).

The environmental justice movement reflects the broader view of the environment as the place where human activities occur. For Turner and Wu (2002: 4), the view of nature and environment as something pristine and separate from everyday life would produce privileges such that only those with money or rural people will have access to it. Furthermore, it places negative burdens on indigenous or rural people if the pristine nature or environment needs to be protected behind the borders of a national park. Geisler and Letsoalo (2000) point out that millions of rural people inhabiting marginal lands worldwide have been evicted from their homes in the name of conservation. Similar criticism was made by O'Neill (1997a: 50, 55) of authoritarian forms of environmentalism, especially the alliance of certain conservation groups, third world politics and corporations that has led to the exclusion of indigenous people in the name of wilderness.

According to Sandweiss (1998: 39), the environmental justice movement integrates environmental concerns into the civil rights frame by framing the problem of disproportionate exposure to environmental risks as a violation of civil rights. Activists in the movement claim the opportunity to live in a healthy environment as part as their basic rights, parallel to their fighting for solving poverty, equal education and employment. In order to transform the way mainstream environmentalists think about the environment that often ignores the social justice implications of the problem, activists in the movement connect environmental concerns with claims for justice.

For some activists or academics, the term *environmental racism, environmental equity* or *environment justice* are linked terms for the problems or circumstances that minorities and low-income communities face because of their disproportionate

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exposure to environmental hazards and burdens. It stimulates debates over the use of these terms and different definitions of the same term. The term *environmental racism* was introduced in the mid 1980s, and racism is seen as an independent or crucial cause of environmental injustice in the earlier research. The Commission for Racial Justice of the United Church of Christ (1987) in their report *Toxic Wastes and Race in the United States* argues that race is the central determining factor in the distribution of environmental hazard exposure in the United States. It prompted a series of publications that launches attacks on racial discrimination in hazardous waste siting decisions (e.g. Bryant and Mohai, 1992; Bullard, 1993; Westra and Lawson, 2001). Bryant (1995: 5) regards environmental racism as 'an extension of racism' and defines it as follows:

> [Environmental racism] refers to those institutional rules, regulations, and policies or government or corporate decisions that deliberately target certain communities for least desirable land uses, resulting in the disproportionate exposure of toxic and hazardous waste on communities based upon certain prescribed biological characteristics.

Environmental racism reflects a very narrow concept as it focuses on the disproportionate environmental bads imposed on communities as a result of their racial characteristics. For Rhodes (2003: 17), the term *environmental equity* carries less baggage than environmental racism and has been in use to describe 'an ideal or object toward which groups were striving'. Environmental equity tends to focus on the job needed be done in terms of regulation policy and environmental laws (Bryant, 1995: 5). According to the U.S Environmental Protection Agency's definition, environmental equity 'is the equal protection from environmental hazards of individuals, groups, or communities regardless of race, ethnicity, or economic status.' However, this definition of environmental equity simply focuses on negative

environmental impacts without addressing the distribution of environmental benefits, public participation in the environmental policy making process or the remedy for inequities (Rhodes, 2003: 17).

As the movement evolved, activists, academics and the federal agencies have replaced the term equity with justice because *environmental justice* is seen as broader in scope (Bryant, 1995: 6). Discussion on environmental justice covers a wide range of issues. For Hofrichter (1993: 4), environmental problems are inseparable from other social injustices. Environmental justice is about 'social transformation directed toward meeting human need and enhancing the quality of life – economic equality, healthy care, shelter, human rights, species preservation and democracy – using resources sustainably'. Demands for environmental justice stress 'equal access to natural resources and the right to clean air and water, adequate health care, affordable shelter and a safe workplace.' Bryant (1995: 6) argues that environmental justice coalitions 'make political social change possible for a more equitable and environmentally just society.' He states:

[Environmental justice] refers to those cultural norms and values, rules, regulations, behaviors, policies, and decisions to support sustainable communities, where people can interact with confidence that their environment is safe, nurturing, and productive (p. 6).

Bullard's (1993) discussion on environmental justice reflects the connections between environmental and social problems. As he puts it, the 'focus of activists of color and their constituents reflects their life experiences of social, economic, and political disenfranchisement', and their demand for environmental justice 'are embedded in the larger struggle against oppression and dehumanization that exists in the larger society' (pp. 7-8). Furthermore, environmental justice is not limited to

events of injustice in localized geographical areas but evolves injustice over greater regions and transcends the present generation. For example, environmental injustice can happen between countries as one country overuses scarce global resources, and damages other people's environments. The uncontrolled use of persistent chemicals and inappropriate disposal of nuclear waste would cause adverse impacts on the health of children and future generations (ESRC Global Environmental Change Program, 2001).

It shows the complexity of environmental justice as the term covers a wide range of issues and has many meanings to environmental groups, activists and academics. In this thesis environmental justice is used in a broad sense, which includes concern with distributional equity of environmental risks or goods, cultural and radical recognition, democratic participation in decision-making, as well as other complex related issues. The following sections explore how claims for justice in the environmental justice movement have been theorized and the links between the theory and issues raised in the movement.

The distributive dimension of environmental justice

The discourse of social justice has centered on demands for equal distribution for a long period of time, including not only material goods but also immaterial aspects, such as power and opportunities. It leads to the dominant way to think about questions of environmental justice in terms of the fair or equitable distribution of environmental good and bads.

The distributive model of social justice

Justice has been defined almost entirely in terms of distribution for many ethical theorists (Shrader-Frechette, 2002: 24). For example, in Rawls's *A Theory of Justice*, justice is defined as 'a standard whereby the distributive aspects of the basic structure of society are to be assessed' (1971: 9). For Barry (1999: 49), justice is referred to only in cases where 'some distributive consideration comes into play'. Nell and O'Neill (2003) assume that the main difference between socialist justice and capitalist justice lies in their principles of distribution.

According to Almond (1995: 12), distributive justice is concerned with the allocation of goods and benefits and is linked with the notion of fairness or equity. The principles for a fair or just distribution of goods and benefits include that they should be distributed absolutely equally, according to need, and in proportion to merit or desert. Utilitarianism provides another principle of distribution. The utility principle is that principle which approves or disproves of every action according to whether it increases or diminishes the amount of happiness or pleasure of the party whose interest is in question. Under the principle of utility, it requires the equal consideration of interests or happiness of each person in the calculation of consequences (Bentham, 1994: 306-7). Rawls's 'difference principle' offers an alternative principle of distribution that focuses on the welfare of the least advantaged people. Both utilitarianism and Rawls's theory seek to allocate social goods on the most acceptable outcome basis (Almond, 1995: 12). But these variety ideas of justice might conflict, and differing way of thinking of justice would lead to diverse outcomes.

Instead of adopting a universal theory of justice, Walzer (1983) discusses the concept of justice in historical and cultural place. As he argues:

[T]he principles of justice are themselves pluralistic in form; that different social goods ought to be distributed for different reasons, in accordance with different procedures,

by different agents; and that all these differences derive from different understandings of the social goods themselves – the inevitable product of historical and cultural particularism. (Walzer, 1983: 6)

Walzer's approach of justice involves the idea of difference, and concepts of justice are not universal but limited in a diverse world. Walzer's pluralistic notion of justice corresponds to the diverse justice language used in the environmental justice movement, but he focuses on issues of social goods and remains tied to the distributive dimension of justice.

The distribution of environmental goods and bads

There has been much written on the distributive element of environmental justice discourses. Concerns for the distributive dimension begin with the observation that people of colour, the poor and indigenous tribes suffer from a disproportionate amount of environmental burdens, such as exposure to toxic wastes, pollution, workplace hazards and depletion of local natural resources (Figueroa and Mills, 2001: 427). Many studies tend to focus on racial and income disparities in the distribution of environmental hazards (e.g. Bryant and Mohai, 1992; Lee, 1992; White, 1998).

For Wenz (1998), environmental justice is primarily about distributive justice, which concerns the manner in which benefits and burdens should be allocated when there is scarcity of benefits and a surfeit of burden. Wigley and Shrader-Frechette (1995: 137) also insist that environmental justice mainly concerned with distributive equity and is based on the principle of equal treatment for equal beings, which gives equal consideration to each person's interests in environmental decision making. To meet the requirements of justice requires justifying unequal treatment by reference to relevant differences, and justifying equal treatment by reference to relevant

similarities. However, other environmental justice theorists who hold different perspectives of justice might disagree with this point. People value different things differently and this affects the criteria people adopted for distribution. For example, a local resident might justify rejecting the dumping of nuclear waste in their homeland by reference to differences in geographical conditions and density of population.

For Dobson (1998: 17), the starting point for considerations of environmental justice is the observation that 'poor people live in poor environments', and environmental injustice is the misdistribution of goods and bads. Dobson provides an account of the compatibilities and incompatibilities between conceptions of environmental sustainability and dimensions of social justice. The examination includes the ways in which different principles for distribution (e.g. needs, desert, entitlement, equality), different notions of benefits and burdens, and different understandings of the community of justice (dispensers and recipients), are compatible with different understandings of environmental sustainability (pp. 5-6). His conclusion is that distributive justice and environmental sustainability are only compatible with particular definitions and frameworks of both justice and sustainability, and environmentalists and social justice activists often talk past one another rather than to each other (p. 239). However, Dobson's conclusions are limited by his sole focus on the distributive dimension of justice and failure to reflect multiple notions articulated by the environmental justice movement, such as the issues of recognition, participation and political processes.

Likewise, Low and Gleeson (1998: 133) insist that the core of environmental justice lies in 'the distribution of environmental quality', with the emphasis on 'distribution'. For them, *environmental* justice is about the fair distribution of good and bad environments to humans, while *ecological* justice is often used to discuss

justice between humans and non-human nature. They provide an environmental analysis of various notions of distributive justice, and attempt to develop general principles of environmental justice and to suggest cosmopolitan and global institutions to carry them out. The contextual and cultural basis of the meanings have been acknowledged by Low and Gleeson (1998: 46, 67), as they point out that justice is understood as 'a universal moral relationship we share with other humans', but 'this relationship has to be interpreted through culturally specific institutions which will vary.' However, cultural difference has not been brought into their definition of environmental or ecological justice. Their discussion of environmental and ecological justice is basically about distributive issues, and does not incorporate the issue of participation into their principles of ecological justice.

Recognition as an element of environmental justice

In response to the claims of new social movements around issues of race, gender and sexuality and reflection on the limits of theoretical focus on 'the distributive paradigm', Young (1990) and Fraser (1997, 1999) call for the recognition of group differences as an element of justice to extend notions of justice beyond the distributive realm. Young (1990: 22) argues that a pure focus on issues of distribution ignores the structural and institutional context within which decisions are made, and a clear understanding of these backgrounds can reveal how they influence distribution – 'what there is to distribute, how it gets distributed, who distributed, and what the distributive outcome is.' Such claims do not reject distributional issues as an element as justice, but rather understand the notion of justice much more broadly. This section discusses notions of recognition and its relation to distributive justice, and the call for environmental justice in terms of recognition.

The relationship between just distribution and recognition of difference

The roots of recognition theory dated back to Hegel's original formation of the master-slave dialectic. In the *Phenomenology of Spirit* (1977), the master and slave are presented as examples of distorted consciousness and lack of freedom, both of which must be overcome through the process of mutual recognition with the other, and the process of transforming the world through labor. However, such overcoming through subject-subject recognition of the other is impossible because the slave exists for the master as neither equal nor distinct. The master can achieve full self-consciousness of the mutuality of their relations only by freeing the slave.

The slave does not find consciousness through the master's recognition. The dialectical process of transforming nature can lead to the emerging consciousness of the slave. As Hegel puts it, 'through his labor the slave comes to himself, i.e., becomes conscious of what he really is ... he comes to himself through interaction with the world, through labor' (1977: 118). The slave's consciousness emerges through the subject-object interaction moment. For Hegel, recognition is realized in the entire dialectical process: intersubjectivity and labor. Instead of drawing on Hegel's two aspects of this dialectic, Marx (1844: 120-6) stresses the labor-centered moment of struggle for recognition. For example, alienated labor makes man a means to his physical existence; we are alienated from our fellows as we relate to them as means or objects. But his later writings tend to focus on issues of ownership of capital and claims for distributive justice.

Contemporary recognition theorists such as Honneth (1992, 1995) and Taylor (1989, 1994) who draw on Hegel emphasize only one aspect of this dialectic: intersubjective recognition. According to Honneth (1992, 1995), the harms created

through misrecognition are primarily psychological and intersubjective, including various forms of insults, cultural domination, invisibility and disrespect. Individuals suffer misrecognition because of gender, race, religion and other culturally relevant factors, and the effects of these wounds to the subjectivity move out from the individual to the larger social systems. For Taylor (1994: 25-6), misrecognition demonstrated by forms of 'oppression, imprisoning someone in a false, distorted, and reduced mode of being' can inflict harm and a grievous wound. He argues that 'recognition is not just a courtesy we owe people. It is a vital human need.'

Fraser (1997) claims that some recent political theory and practice privileges the struggle for recognition, and tends to ignore questions of distribution of wealth and the division of labour. She echoes Hegel's formulation of recognition and attempts to reconnect labor and redistribution with recognition. Instead of identity-based struggles for intersubjective recognition, Fraser emphasizes that 'misrecognition is *status subordination* whose locus is social relations' (p. 37). Fraser (1999: 35) regards it as unjust that 'some individuals and groups are denied the status of full partners in social interaction simply as a consequence of institutionalized patterns of cultural value in whose construction they have not equally participated and which disparage their distinctive characteristics or the distinctive characteristics assigned to them'.

Fraser (1997) argues that justice requires both redistribution and recognition and distinguishes between two kinds of injustice by their primary causal roots. Firstly, socioeconomic injustice is rooted in the political-economic structure of society. The primary forms of such injustice include exploitation, economic marginalization and deprivation. The second kind of injustice is cultural or symbolic, which is rooted in social patterns of representation, interpretation, and communication. Such injustice includes cultural domination, nonrecognition and disrespect. Two different remedies

are corresponding to these two roots of injustice. Recognition redresses the cultural or symbolic injustice, while the remedy for economic injustice is political reconstructing or redistribution. She proposes that collectivities defined by gender, race, class and sexuality suffering from both kinds of injustice face 'the redistribution–recognition dilemma': either adopt redistribution claims that calls for the abolition of economic arrangements underpinning group specificity, or adopt remedies for misrecognition that tends to promote group differentiation.

For Young (1990: 48-63), institutionalized domination and oppression is the root of unjust distribution, and she distinguishes five faces of oppression: exploitation, marginalization, powerlessness, cultural imperialism and violence. The social structures and institutional contexts that produce oppression and distributive inequity come from the lack of recognition of difference and the exclusion from the process of decision-making. She argues that 'justice in a group-differentiated society demands social equity of groups, and mutual recognition and affirmation of group differences rather than eliminating group differences' (p. 191). It shows a direct link between the lack of cultural recognition, the lack of participation and distributional inequity.

Young (1997) agrees with Fraser that a political focus on recognition disconnected from socioeconomic injustice is a problem. But she argues against Fraser's polarization of redistribution versus recognition, suggesting that this leads to a misrepresentation of feminist, anti-racist and gay liberation movements as calling for recognition as an end in itself. Sometimes the politics of recognition is an end in itself for movements of subordinated groups, such as the separatist movements of the Quebecois and other nationalist movements who seem to be regarded as a distinct people as a political end in itself. But recognition is usually disconnected from economic issues of distribution and division of labour when it is taken as a political

end in itself. Young (1997: 156) argues that 'a politics of recognition functions more as a means to, or element in, broader ends of social and economic equality, rather than as a distinct goal of justice.' She attempts to reconnect issues of symbols and recognition to decision-making power and access to resources and argues that 'a better theoretical approach is to pluralize concepts of injustice and oppression so that culture becomes one of several sites of struggle interacting with others.' I will further discuss issues of recognition and distribution in Chapter 5.

I agree with Fraser's (1999) argument that justice encompasses both redistribution and recognition, without reducing either one of them to the other. However, as Macdonald and Merrill (2002: 71-2) argue, Fraser's concept of institutional recognition tends to dismiss the aspect of the subjective-subjective forms of mutuality, self-esteem and identity. In fact, both modes of recognition are interconnected in important ways and are not reducible to the other. Besides the misrecognition of an institutional relation of social subordination offered by Fraser, indigenous and colonized people might have wounded identities. As Taylor (1994: 25-6) argues, the dominant society has projected a demeaning image of indigenous and colonized people as somehow 'inferior' and 'uncivilized', and such people have internalized a picture of their own inferiority. The Yami tribe case discussed in Chapter 5 exemplifies both institutional recognition and the subjective dimension of recognition that is crucial for human interaction and ethnic relations.

The environmental justice discourse on recognition

The demand for cultural recognition and identity are crucial components of the environmental justice movement, although the theoretical discussions of the conception of environmental justice in terms of recognition are limited. Demands for

recognition and autonomy are evident and central to communities of indigenous peoples or ethnic minorities. As Taylor (2000: 534) argues, 'the environmental discourses of people of color are framed around concepts like autonomy, self-determination, access to resources, fairness and justice, and civil and human rights.' He insists that autonomy is a major component of environmental justice and recognizes the need to 'respect the cultures of all people, honoring cultural diversity, and appreciating a variety of belief systems that relate to the natural world' (p. 542). Martinez-Alier (2003) also argues that which language of valuation in environmental conflicts predominates is itself an issue of justice. A single standard of valuation in ecological distribution conflicts, such as monetary compensation for an environmental liability or economic gains from a mining project, indicates 'a failure to grasp the existence of value pluralism' (p. 221). He claims that there could be many languages expressed or different standards of valuation deployed against monetary valuation of environmental risks, including indigenous rights, a lack of understanding, sacredness, culture and so on (see Chapter 4 and 5).

The problems of misrecognition and disrespect are not limited to the community realms. Schlosberg (2003: 89-92) argues that misrecognition is experienced at both the individual and community level. For environmental justice activists, disrespect on the personal level is an everyday experience in terms of the demeaning body language. On the other hand, it involves a matter of cultural survival when activists see their identities and communities are devalued and recognition is denied. Peña's (2003) case study on traditional land rights and ecosystem management in south central Colorado's San Luis Valley shows the important role of place-based identities in the formation of the discourses of environmental justice. The engagement of issues of cultural meaning reflects one facet of environmental justice struggles.

According to Schlosberg (1999: 12), equity cannot fully encompass the notion of environmental justice. The problematic distribution of environmental risks mirrors the inequity in socioeconomic and cultural status. Schlosberg argues that the environmental justice movement reflects its focus on both the distribution of environmental bads and the recognition of the diverse communities. He suggests that 'procedural equity is a way to address both distribution and recognition' (1999: 12). The demand for political participation in decision and a democratic process brings us to the third notion of environmental justice.

The procedural and participatory dimension of environmental justice

Efforts have been made to extend analyses of justice in the distributive realm to issues of recognition and procedure. The concept of procedural justice and its relation to distribution equality and cultural recognition need to be further elaborated as the demands for democratic participation are also at the center of the environmental justice movement.

The discourse model of justice and the interplay of equity, recognition and participation

Habermas's work provides a discourse ethics perspective to the concept of justice. He argues that minimal criteria of justice are derived from his conceptions of communicative action and communicative rationality (Habermas, 1984, 1987; White, 1988: 23). Habermas (1990: 122) makes his position clear that discourse ethics and communicative rationality concern the procedural dimension: 'Discourse ethics does

not set up substantive orientations. Instead it establishes a *procedure* based on presuppositions and designed to guarantee the impartiality of the process of judging.' In Habermas's work on the theory of communicative action and discourse ethics, his attempt to develop a universal rational foundation for democratic institutions focuses on intersubjectivity. Habermas centres on the study of the process for dealing with rationality and power by establishing consensus. He argues that the participants in a given discourse must presuppose that:

> The context of discussion guaranteed in principle freedom of access, equal rights to participate, truthfulness on the part of participants, absence of coercion in adopting positions, and so on. If the participants genuinely want to convince one another, they must make the pragmatic assumption that they allow their "yes" and "no" responses to be influenced solely by the force of the better argument (Habermas, 1993: 31).

According to Habermas (1984), a reasonable consensus can eventually be distinguished from a false one only in respect to an ideal speech situation. Only when a decision is reached owing to 'the force of the better argument', can it be argued that communication has taken place free from domination. It leaves all concrete moral and ethical judgements to participants in that given communicative process. However, his work faces the criticism of idealism and utopianism. Flyvbjerg (2000) criticizes Habermas's project for paying scant attention to how power functions in actual politics and administration, to the massive importance of non-communicative forces, and to substantive ethical values. Habermas acknowledges that it is doubtful whether the ideal speech situation can be empirically attained because of external political and internal psychological constrains on the participants. For Kemp (1985: 188), this is not a problem since the model of the ideal speech situation should be used counterfactually as a critical measure of the existence of constraints on

communication. I further discuss the limits of Habermas' discourse ethics and the need for correction in Chapter 7.

Young (1990: 48-63) endorses Habermas's general conception of justice derived from communicative ethics and an argument for justice that shifts from a focus on the distributive paradigm to procedural patterns of participation in deliberation. In Young's view, social equity is a goal of social justice that primarily entails 'the full participation and inclusion of everyone in a society's institutions, and the socially supported substantive opportunity for all to develop and exercise their capacities and realize their choices' (1990: 173). But she criticizes Habermas's implicit commitment to a homogeneous public and tries to bring the notion of cultural difference into the discourse of justice (p. 158). The form of procedural justice she advocated recognizes the differences of race, culture, gender and disability, empowering disadvantaged groups to bring their situated perspectives into policy-making debate. Like Young, those who advocate a model of discursive or communicative democracy stress the recognition of the right of all with differences to participate in decision-making (e.g. Benhabib, 1996; Gould, 1996).

The central focus for Young (1990) is the elimination of institutionalised domination and diverse forms of oppression. She regards the participatory process as the best way for citizens to have their own needs and interests heard. As she puts it, 'weakening relations of domination so that persons have greater institutionalized opportunity to participate in discussions about the making of decisions that affect them itself is a condition for achieving greater distributive fairness' (p. 94). For Young, democratic decision-making procedures could address a variety of injustices, including distribution inequality and misrecognition. Likewise, Honneth's (1992) argument for recognition reflects a link between a lack of respect and recognition, a

person's structural exclusion, and a limited role in the decision-making process. As he puts it: 'The experience of being denied rights is typically coupled with a loss of self-respect, of the ability to relate to oneself as a partner to interaction in possession of equal rights on a par with all other individuals' (p. 191).

The theoretical discussions of justice by Young, Fraser and Honneth indicate that these notions and experiences of injustice - inequitable distribution, a lack of recognition and a decline in participation - are interwoven in political and social processes. Schlosberg (2003) agrees with such an integrated understanding of justice and argues for a linked approach to justice:

> It is not just that political and cultural institutions create conditions that hamper equity and recognition, but that both distributive inequality and misrecognition hamper real participation in political and cultural institutions. Issues of justice are not just bivalent, but trivalent. In the case, improved participatory mechanisms can help meliorate both other forms of injustice, but those forms of injustice must be addressed in order to improve participation (Schlosberg, 2003: 86-7).

Let us explore how political participation and democratic processes link issues of recognition and distributive equality in environmental justice discourses.

Environmental justice discourses on the procedural dimension

Demands for democratic participation and communication are central to the environmental justice movement. A few studies have made efforts to combine theoretical and empirical work, and extend notions of environmental justice that encompasses the procedural, participatory and distributive dimensions of justice, and issues of recognition. Hunold and Young (1998) apply Young's (1983, 1990) theoretical framework to argue that democratic decision-making and participation in political process are crucial issues of justice to the case of siting hazardous industrial

facilities. They suggest that justice requires a participatory communicative democratic process for hazardous waste siting. Firstly, it is *prima facie* unjust to impose environmental bads on citizens without their participation in the process. Secondly, a communicatively democratic process in facility siting is likely to yield the most just outcomes when structured according to specific norms of discussion and inclusion of all the heterogenous positions. For them, a democratic process and public participation reflect the respect of interests and autonomy of those affected (p. 87).

Shrader-Frechette (2002) provides the connection between the distributive and procedural dimensions of justice, and argues for a principle of prima facie political equality (PPFPE) as the basis for resolving and clarifying situations of environmental injustice. She emphasizes that distributive justice that requires a fair or equitable allocation of environmental benefits and burdens is essential for environmental justice. However, it is insufficient to promote environmental justice if the focus is purely on the distributive outcomes. Shrader-Frechette (2002: 28-9) endorses Young's point on participatory justice and argues that it requires integrating lay and expert knowledge with equal consideration to policy-making process surrounding the issue of a risky plant siting. Capek's environmental justice frame also emphasizes citizens' rights, democratic process and respect for grass-roots knowledge (1993: 8).

Along the lines of Young, Lake (1996: 165) argues that 'redistributing outcomes will not achieve environmental justice unless it is accompanied and indeed, preceded by a procedural redistribution of power in decision-making'. He incorporates the concepts of self-determination and individual autonomy into the broader conception of procedural justice. Illsley (2002) also argues for the connections between distributive justice, procedural equity and respect for the social and cultural diversity of communities.

The Principles of Environmental Justice ratified at the 1991 First National People of Color Environmental Leadership Summit demonstrates that the very key focus on procedural justice is evident. It affirms 'public policy be based on mutual respect and justice for all peoples', 'the fundamental right to political, economic, cultural and environmental self-determination of all peoples', 'native people's sovereignty and self-determination', and 'the legal relationship between native people and the U.S. government through treaties, agreements, compacts and covenants' (see Hofrichter, 1993: 237-9). The concerns with procedural equality in the environmental justice movement are actually linked to the call for justice in terms of recognition and the distribution of environmental risk.

Pluralistic notions of environmental justice

The demands of movements that identify themselves as pursing 'environmental justice' reflect a broader conception of justice. Schlosberg (1999: 13) points out that the vast majority of environmental justice literature demonstrates the problems of environmental inequity, but very little literature focuses on, and relates the movement to, larger theoretical issues, such as the importance of acknowledging of diversity within the movement. Schlosberg (1999) argues that environmental justice movement embodies new forms of critical pluralist practice, and links the distributional inequity with a need to recognize diversity. Following Schlosberg (1999, 2003, 2004), the conception of environmental justice reflects the interplay between equitable distribution of environmental bads, recognition of group differences, and democratic procedures and participation.

This section introduces a pluralistic notion of environmental justice, including the discussion of Wenz's (1998) pluralistic theory of environmental justice that moves

beyond the focus on human beings, and the efforts made by other researchers to expand issues of recognition to nature. It concludes with suggestions for ethical pluralism, explored further in chapter 7.

The Concentric Circle theory of environmental justice

Wenz (1988) adopts a broader conception of distributive justice, arguing that the recipients of distribution should not be confined to contemporary mankind. It includes the distributive of benefits and burdens between the current generation and future generations, and between human and nonhuman species, especially endangered species. He examines the whole spectrum of ethical theories and finds that each theory is not adequate for setting the issues of environmental justice. Thus he proposes a pluralistic theory of justice that contains a variety of independent principles featured in a variety of theories, which enables us to appeal in a consistent manner to principles. The Concentric Circle Theory of environmental justice offers a framework within which to contemplate the questions of environmental justice. It integrates obligations concerning human rights with animal rights, nonsentient environmental constituents as well as future generations. Wenz's views on environmental justice can be expounded as follows.

Human rights and obligations. The idea of rights is central to the liberal notion of justice. John Locke (1946) declared that people have natural rights to life, liberty and property, according to a law of nature. Since natural rights are attributed exclusively to human beings, these rights are also called human rights. The human rights proclaimed by Locke are negative human rights, rights to noninterference. They are called negative because they require people simply to refrain from doing certain things that interfere with other people's life, liberty or property, rather than requiring them to

do something. According to Kant, the idea of humanity as an end in itself implies that no maxim which treats a person merely as a means can be a moral law valid for all men (Kant, 1959: xiii, 47). He further proposes the principle of the autonomy of the will – that man has the dignity to create the moral law (p. 51, 54). Although Kant does not maintain that there are human rights, Wenz (1988: 121-2) claims that Kant's position yields positive and negative human rights as well. Following Kant's position, Wenz (1988) points out that negative human rights are the rights people have 'to be left alone to enjoy their life, liberty, and property' (p. 121). Positive human rights mean that people who cannot provide for themselves have rights to be helped in necessities according to the human rights tradition (p. 122).

According to Wenz (1988: 317-319), human individuals have the moral obligation to protect the positive and negative rights of others. The strength and number of an individual's obligations to others are directly related to the closeness of that individual's association with others, which can vary with the context and subject matter of interaction.[30] I have more responsibility for the positive rights of people who exist in a concentric circle that is closer to me than those are at greater remove. Similarly, the happiness and preference of people in the closer circle have a strong claim on me than others. But the claim of positive rights outweighs merely wanting something. Thus the positive rights of people in a more remote circle have greater claims on me than the preference of the person close to me that I can satisfy (p. 321). Negative rights are different from positive rights in the Concentric Circle Theory. The individual's obligations to the negative rights of people are not affected by their locations in the concentric circles (pp. 324-25). However, one's obligations to the

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30 According to Wenz (1988: 316-7), moral relationships are pictured in terms of concentric circles. The concentric circles are just a picture or metaphor that are helpful for the exposition and understanding. Closeness is defined in terms of the strength and number of ones obligations to others. The closer our relationship is to someone or something, the greater the number or the stronger of our

negative rights of people might conflict with one's obligations to the positive rights of people. Wenz does not answer the question as to which rights are more important.

Non-human animals. Wenz (1988) points out that environmental justice would be incomplete if we ignore the interests of nonhuman animals and the environment, because of the interdependent relationship between human beings, nonhuman animals and other species. However, the concentric circle approach maintains that 'our obligations concerning positive human rights diminish in such a way that the outer circle of human beings is the last concentric circle to which they extend. These obligations generally do not extend to animals, who inhabit more remote concentric circles' (pp. 327-28). But Attfield (1999) argues that Wenz's theory that 'removes the positive interests of wild animals from consideration altogether is arbitrary' and that their well-being cannot be disregarded (1999: 159). Wenz (1988) argues that it would cause the extinction of carnivores, and veterinarians will be busy with the assistance in animal care if policy requires us to protect animals' positive rights. This problem can be avoided by the insistence that 'while nonhuman animals have negative rights, they have no positive rights.' For Wenz, there exist exceptions in domestic animals, such as pets and farm animals. Since domestic animals are dependent upon us for the necessities of life, we have obligations to their adequate food and health care (p. 328-9). But domestication and captivity would violate the animals' negative right to liberty (p. 152).

The environment. Wenz (1988) integrates Ecocentric Holism with the Concentric Circle Theory that the evolutionary process which tend to increase biotic diversity inhabits a relatively remote circle of moral concern, but this does not imply that our obligations to ecosystems should be subordinated to other concerns. As he puts it, the 'evolutionary process should not be harmed to serve the artificial and / or irrational

obligations in that relation.

desires of relatively affluent people for unnecessary consumer goods' (p. 329). 'Our obligation is to avoid impairing the health of the ecosystem as a whole, because healthy ecosystems are necessary for the relevant process of evolution' (p. 330).

Future generations. According to Rawls, people behind the veil of ignorance know that they will all be members of the same generation when the veil is lifted. But he maintains that each person in the original position should care about the well-being of some of those in the next generation and their goodwill stretches over at least two generations (Rawls, 1971: 128-29). Wenz argues that Rawls's view could not settle long-term environmental problems, such as nuclear waste, since a self-interested individual would not extend concern to people of the distant future. He thinks this problem can be solved by thickening the veil of ignorance. Suppose people behind the veil of ignorance do know that they will all be members of the same generation or if some will live in one thousand years; then they will choose the principle that requires that each generation use natural resources in the sustainable way. But Rawls rejects this approach because it asks too much of our imagination (Wenz, 1988: 249, 357).

Wenz extends our obligations to future generations, because what we do affects the earth on which they will depend for their survival and then we are in the position to be beneficial or harmful to future people. He thinks that our relationship to future generations is like a fiduciary relationship, and we are like trustees of an estate that future people will inherit. From the concentric circles perspective, 'future generations exist for us in a relatively remote concentric circle, having full negative human rights, and having positive human rights according to their degree of remoteness', said Wenz. He points out that the current agricultural practice in the USA in the extreme cost-effective way is destructive to the land's fertility and fails to provide future people with the resources for producing the necessities of life. Thus, we violate at least the

positive human rights of future generations and if our actions inflict harm on members of future generations, we also impinge their negative human rights (p. 333).

Wenz examines the whole spectrum of distributive justice with an eye toward the application to nature and future generations. But we need to further extend beyond the purely distributive dimension to contemplate the questions of environmental justice.

Extension of recognition to nature

The environmental justice movement affirms the sacredness of Mother Earth and the interdependence of all species. Drawing on Young's (1990) argument about institutionalized domination and oppression as the root of unjust distribution and the need for the elimination of a variety forms of oppression, I want to suggest that the lack of reflection on the impact of human conduct on nature would be at the heart of such domination and environmental justice problems. As to the issue of environmental destruction, nature could be seen as be subject to Fraser's (1995: 71) three different forms of recognition: nonrecognition (being rendered invisible), disrespect (being routinely maligned or disparaged in stereotypic public and cultural representations) and cultural domination (being subjected to patterns of interpretation and communication). The discourse on environmental justice could extend recognition to nature and reflect on the relationship between human and nature.

Theories of justice tend to dismiss the extension of social justice beyond the human community, such as Rawls (1971) and Walzer (1983). Barry (1999: 95) points out that human treatment of nature invites judgements of right and wrong rather than justice or injustice, arguing that the notion of justice can be only applicable to relations among creatures who are regarded as on an equal moral footing. In contrast, Leopold (1949) regards nature as an extension of our own moral community and

argues that human beings have obligations to the community. Sagoff (1993: 86-7) argues that Leopold's view does not advocate an egalitarian moral system within nature in order to deserve admiration. An ecological system has a beauty and an authenticity which demands respect, and we extend a concern for and recognition of nature which is our community.

The central argument of ecocentric theorists, such as the majority of Green political thought, seeks to take the interests of not only future generations but also the nonhuman community into account in political decision-making. Eckersley (1990; 1992: 109-17) argues against Habermas's idea that only humans capable of speech should be permitted to participate in a discourse, and she regards it as anthropocentrically prejudiced. She emphasizes that many earlier cultures did have various strategies for including non-human nature in decision-making, although the competence of doing so is difficult to establish, especially from a rationalist point of view.

However, the recognition of nature does not imply any necessary defence of an ecocentric position. For Hayward (1998: 66-67), humans are viewed as part of nature, and concerns for nature are based on rational self-interest (some instrumental consideration of others' interests), enlightened self-interest (others' interests play a part in shaping one's own interests) and solidarity (the mutual constitution of interests with others) rather than the defence of the intrinsic value of nature. Solidarity combines justice and care and develops 'when one group of people is involved in a struggle for rights, recognition, justice or an end to oppression and when other people, who are not directly involved in the struggle, nevertheless feel that they want to side with those involves, take their part, and make the cause their own'. It contains an element of empathy or care and a sense of justice (p. 77). Hayward (1998: 119) argues

that respect for nature comes from respect for each other and ourselves. Since humans are part of nature, it is part of human interest to recognize the mutual constitution of interests with others.

Dryzek (2000) argues for green democracy seeking effectiveness in communications that transcend the boundary of human beings and the non-human world, which involve less anthropocentric political forms. He defends Habermas' communicative rationality by the recognition of nature as agents though they lack subjectivity. Recognition of agency in nature means that we should listen to the 'signals' emanating from the natural world and treat these signals with the same respect as we do speech coming from human subjects. As Dryzek (2000: 149) puts it, 'our relation to the natural world should not be one of instrumental intervention and observation of results oriented to control'. For him, signals coming from nature can be in the form of global warming, increased flooding, drought, and species extinction. Indigenous people can probably do better as to effective listening and interpretations of the needs of ecosystems of which they are component parts; but there is no reason why the capacities of those long alienated from natural surroundings cannot be recovered (pp. 149-50). In this, the process of communicative reason can be extended to non-human entities. The recognition of nature entails our bringing nature's signals in decisions-making process.

In summary, this section showed that there are a significant variety of values, and different point of views and ways of looking at environmental justice problems. There is no single moral principle can be sufficiently applied in all problematic situations (Parker, 1996: 31-2). Brennan's (1992) argument for moral pluralism provides a valuable insight: 'By adopting the pluralist stance, we not only start to do justice to the complexity of real situations, but we also can start to look for ways by which

environmental ethics can be linked up with other modes of valuing and ways of responding to our surrounds.' I argue for the necessity of ethical pluralism that admits multiple ways of describing the value of nature and diverse experiences in the discussion on environmental justice problems, which attempts to link existing moral grounds in human communities with practical environmental concerns. I will return to this in Chapter 7.

Conclusion

This chapter provides the examination of the theoretical notion of justice and the conception of environment in the environmental justice discourses. The environmental justice movement represents broader concepts of justice that includes the equitable distribution of environmental goods and bads, as well as issues of recognition of difference, diversity of languages used in environmental conflicts, procedural equity, democratic participation, and the interconnected relationship between human and nature. Discourses on environmental justice are not limited to the distribution dimension, but there has been less written on the specific issues of recognition, the explicit connection between distributive dimension, participatory justice, recognition of difference, and the application of expanded framework of justice to nature.

Environmental justice is not based on a singular conception of justice. Schlosberg's (1999) work on the relationship between theories of pluralism and environmental justice shows that the pluralistic notion of environmental justice allows for the linkage of varied notions of justice and multiple forms of injustice situations. Different local experiences could reflect the diverse understanding of the notion of justice and a variety of framing issues (see Chapter 5 and 6). I argue for ethical pluralism, a validation of difference, as one of the important focuses of environmental

pragmatism. I will discuss how the particular form of environmental pragmatism and pluralistic discourses on environmental justice might facilitate the constructive management of nuclear waste disputes and help to defuse conflicts in a pluralistic society in Chapter 7.

Chapter 3 Context and methodology

This chapter provides an introduction to the particular context of Orchid Island, the ecological themes in the Yami and Taiwanese worldviews and the research method. It begins with a review of the social and economic background of Orchid Island and how the traditional self-sufficient society is now undergoing great changes due to the impact of the market-based economy and tourist industry. The second section explores the value systems and ecological traditions of the Yami tribe, with a comparison with the Taiwanese worldviews. Thirdly, the key Chinese terms that are given different interpretations will be discussed. After discussing the problems of using quantitative research on public perceptions of the nuclear waste repository or nuclear power plants and environmental justice issues, I introduce the method employed in this thesis. Focus group methods and archival analysis are complemented with data collected through participant observation and interviews.

The sociocultural and economic background of Orchid Island

Orchid Island,[31] a 45.7 square kilometer island, has a population of nearly 3,000 indigenous Yami residents and around 300 Taiwanese migrants. Due largely to their isolation, the Yami are regarded as the most primitive of Taiwan's aborigines. On the other hand, Orchid Island was governed in a way such that any decisions were made after consultation with anthropologists to protect its distinctive oceans cultures and avoid the impact of dynamic forces released by industrial civilization on the island during Japanese colonial times (1895-1945) (Limond, 2002b). This particular

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[31] The island was renamed Orchid Island (Lanyu, in Chinese pronunciation) by the government in 1946 because of the butterfly orchids that once grew in profusion. But they have become quite rare nowadays.

historical experience, different from that of other aboriginals, also affects the development of Orchid Island.

Since the take-over of Orchid Island by the Taiwanese Government in 1946, the tribe is undergoing great changes and has come in contact with the outside world. The traditional Yami society is self-contained and makes little impact on the environment. Fishing is central to the Yami economy and is supplemented by farming. They produce most of their food, build their own houses and fishing boats, and make some of their clothing. Since 1960s, the deregulation of the way land is used and external investment has lead to a tourist industry boom, and a market-based economy has been evolving, with commercial goods imported from outside and obtainable only with money. It leads to the loss of economic autonomy and a 'semi-subsistence' lifestyle. A lot of Taiwanese tourists travel to Orchid Island particularly in the summer time, which has brought a commodified culture.

The problems of unemployment and of a population dominated by the older Yami generation are significant on Orchid Island. Agricultural and aquatic products, stock and handicrafts are the main economic sources for the Yami. There are not many jobs for the Yami as those who run the tourist business or restaurants tend to be Taiwanese. The Yami younger generation is gradually losing traditional skills for life as many of them are spending more time in compulsory education. Instead of choosing traditional occupations, most of the younger Yami tend to seek greater material rewards available in the big city because the earnings allow them to purchase goods that are unaffordable for their parents, such as better household appliances, gadgets and motorcycles. Some of the old Yami or children gradually rely on other family members who earn money in big cities or have to live on their pension from the government or charity (Yu, 1991). In fact, it is not just the factor of economic

incentives that has led to the exodus of the Yami younger generation; lack of educational resources and poor medical quality on Orchid Island are crucial problems as well. There is a small public clinic with few doctors and several nurses, and the limited facilities mean that only minor problems can be treated. Orchid Islanders have to go to hospital in other cities for better diagnoses or for treatment for serious illnesses.

Those young Yami who attempt to seek jobs in the city might find it hard to integrate into or get used to the mainstream society or culture. Some return to Orchid Island and experience the generation gap, while others might bring materialism and different ideas to their homeland. As I mentioned in Chapter 1, the Yami speak languages belonging to the Austronesian language family. Although the Yami still preserve their languages and traditional customs, the tribe is facing the impact of modernization and the crisis of language loss. In fact, the young Yami are gradually losing the ability to speak their mother language and even have difficulty communicating with their elders. As the social and cultural conflicts become more obvious on the Island, more members of the Yami tribe are becoming aware of the need to preserve their culture.

As mentioned in Chapter 1, the controversial nuclear waste repository has caused a great impact on the Yami tribe. It has led to Orchid Island's over-dependence on Taipower. The huge amounts of compensation offered by Taipower has been used to improve the living quality on Orchid Island, including the subsidy of medical services, the improvement of education and school buildings, road construction, the refurbishment of churches and cheaper electricity. The compensation provided by Taipower has been a great help to the local economy and social welfare. However, every year a large part of the compensation is untouched as the tribe has no consensus

on how to use it and on what kind of place they want Orchid Island to become (see Chapter 4).

The Yami society has no clear class division, and there is no specific authoritative structure or dominant leader. There are six Yami tribal villages on the Island and each village is an independent unit with its own fishing ground, fields and land that members of other tribes cannot use without the villagers' consent. Traditionally, conflicts between tributes or important events are settled through a conference held by the chiefs and elder members of the tribes. Most members usually follow the decision, though it is not binding or enforced (Yu, 1991). According to the current local system, Orchid Island is classified as a township and public offices and councils are set up to govern the Island. The mayor and councilmen elected by citizens of the island have four-year terms of office. The chiefs and elders are still respected nowadays, but the elected Yami representatives and officials have taken away much of their authority and functions.

Besides the Yami, there are hundreds of Taiwanese people and a few non-Yami aborigines living on Orchid Island. Most of them are involved in teaching, public service, the tourist industry and charity. In general, the scenery of Orchid Island, less stressful jobs and a simple life attract these Taiwanese people, though other factors might lead to their stay on Orchid Island (e.g. job rotation, salary incentives, doing compulsory military service). When government officials, journalists and the majority of Taiwanese people talk about the disputes over the nuclear waste repository or other events happening on Orchid Island, they tend to focus on the Yami tribe or feel sympathy for them and pay less attention to the feeling or opinions of those Taiwanese migrants on Orchid Island (see Chapter 4, 5 and 6). This section reflects the realities

and changes of Orchid Island that could provide implications for the more detail examination of public attitudes toward the nuclear waste repository in Chapter 4 and 5.

The Yami and Taiwanese worldviews: ecological themes

The Yami traditional beliefs and ocean culture

The sense that they are an integral part of the land is seen as common to indigenous worldviews around the world (Foltz, 2003: 79). The land and sea are both identified as important in traditional Yami cosmology (Kwan, 1989). The Yami live on fishing and farming, and regard the flying fish as their sacred symbol and as holy. The Yami ecological calendar, different from the Chinese lunar calendar, is mainly based on the season of the flying fish. The Yami regard the flying fish as the fish from the Sea in Heaven sent to support the life of the tribe. A variety of spiritual rituals are held every year associated with the activity of catching the flying fish – praying for harvest, offering sacrifices and showing their fear of the supernatural. For Zhan (2002), the fishing and farming based on the Yami calendar combines with rituals to avoid the over exploitation of the flying fish. For example, the ritual of the end of flying fish season and the ritual of the end of eating flying fish during every year place restraints on the Yami activities, forcing them to do other activities such as picking clams and shellfish, cultivation and constructing boats in these seasons.

The Yami's traditional views on the spiritual involve a hierarchical order. Those deities that reside in the firmament are called 'people above'. They think the place deities occupy can be divided into several layers, and in every layer live one or several deities. For instance, the highest spiritual being is responsible for the ultimate decision about punishment by rain, fire or storm, and approval of the sub-deities' proposals. The highest spiritual being is seen as benevolent and will get angered when neglected.

Therefore, the Yami tribe needs to appease the highest spiritual beings by sacrifice. The second spiritual being controls the sacred fish and the ocean. In contrast, 'evil ghosts', the spirits of the dead, are seen as mostly malevolent and omnipresent in the Yami world. Evil ghosts tend to be around the house where a death has occurred and in the neighbourhood of graves. They could appear in the form of rats or large butterflies. The Yami regard evil ghosts as the origins of misfortune and disaster, and have a cautious attitude toward them. The Yami seldom talk about death, burying the dead quickly, and avoiding going to graves because they are the places evil spirits reside. They exorcise evil ghosts by plunging spears around the house of a deceased, at the outbreak of a fire, and when people get sick (Kwan, 1989).

Christianity was brought to Orchid Island in the 1950s and became influential, partly through the associated assistance in material needs and medical services. But the Yami also considered the new religion worth trying in order to chase away evil ghosts in cases of sickness. For Kwan (1989), Christianity has framed the surface and higher level of the Yami traditional belief system, both being seen as coexistent and not in conflict with each other. As some of the Yami have served as ministers in the six villages, Christianity gradually mixes with Yami culture and has a close relation to tribal affairs. According to a survey by the Orchid Island Administration (2002), about half of the Yami have accepted Christianity.

Belief in magic and taboo still plays an important role in restricting the behavior within Yami society. For example, the Yami are not allowed to dig coral, weed, or build houses during the season of flying fish, otherwise they would get a poor harvest or other misfortune. The Yami distinguish a variety of fish according to the characteristics of the time of season, quantity, size and the taste of meat. Some kinds of fish are identified as suitable for men, while other kinds of fish are seen as good for

women or children. The uncommon kinds of fish are regarded as precious, and the Yami are not allowed to dry them for storing. The taboos in the Yami tribe and the distinctions made between a variety of fish can prevent overfishing, which shows that the whole Yami culture and its ritual system are beneficial for biodiversity (Zhan, 2002, Wang, 1999: 200-1). Each village functions as a separate unit, has its own fishing yard, farm and land, and engages in collective consultation in tribal affairs and land use issues. Tribesmen form groups for going fishing and farming together, hold rituals, and follow traditions or taboos collectively. Yami spiritual beliefs, rituals and taboos thus have a close relationship with the Yami lifestyle and the way they use natural resources to keep them in harmony with nature.

Environmental concerns in Confucianism, Taoism and Buddhism

Confucianism, Taoism and Buddhism have been central to the development of the Taiwanese worldview, while Taiwan has also underdone continuous cultural influence from the West and Christianity. Most Taiwanese people view Confucianism as a philosophy with a religious function. Confucian thought is primarily concerned with the moral cultivation of the individual to establish harmonious relationships with others, society and nature. It does not affirm or deny the existence of a deity, but stresses on reverence toward heaven and the worship of ancestors. Confucian thought has had an enormous impact on Taiwanese society, politics, morality and education. Confucius' discourses on ethical behavior have been passed down from generation to generation and the early classic text of the *Analects* is one of the textbooks for compulsory education. Taoism is viewed as an indigenous tradition. Order and harmony in the universe is central to Confucianism and Taoism, and 'Heaven, Earth, and humans are seen as coexisting, interdependent, and interconnected through their

ongoing relationships with each other' (Foltz, 2003: 208). Buddhism has become the most popular institutionalized religion in Taiwan. Taiwanese Buddhists' environmental concerns expressed in the 1990s have heightened public environmental awareness. Let us examine each of these traditions that provide a crucial basis for the ecological orientation in Taiwanese society.

Confucianism and Taoism share a worldview that might be described as 'organic, vitalistic, and holistic' (Tucker, 2003: 218). Both have a profound sense of the importance of nature as primary, and harmony with nature is important. While both Confucianism and Taoism are relational in their overall orientation, Confucianism is more activist, putting emphasis on the importance of social and political commitment as an indispensable part of the human responsibility to create an orderly society in harmony with nature. The stress is on adapting human action and human society appropriately to nature's deeper rhythms and changing patterns (Tucker, 2003: 219-21). Mencius (372-289 B.C), one important Confucian thinker, emphasizes that we should make little impact on nature:

> If you don't interfere with the timing of the farmers, there will be more grain than can be eaten. If fine-mesh nets are kept out of the ponds and lakes, there will be more fish and turtles than you can eat. If loggers are regulated in their woodcutting, there will be more wood than can be used. (A Confucian text from *Mencius*)[32]

The moral cultivation of the individual is viewed as the basic practice that can lead to an orderly family, and then to a harmonious society and harmonious relationships with nature. According to Tucker (2003: 221), the profound interconnection of individual, society and nature is central to Confucian thinking. The Confucian ethical system can be described as a series of concentric circles with the

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[32] Mencius, *Mencius*, tr. C. Muller. Available at http://www.human.toyogakuen-

person in the center, so that relationality extends from the individual in the family outward to the universe. The family or community is seen as the basic unit of human relations. The individual is both supported by and supportive of those in the other circles that surround him or her, and the universe or nature is indispensable for sustaining communal society. The focus on the internal stability of human society in Confucian thought is seen as a form of social ecology that has a beneficial impact on human dealings with nature.

Taoism developed from the philosophy of Lao Tzu and takes *The Way and Its Power (Tao te Ching)* as its central text. In Taoism, the stress is on valuing nature for its own sake and the natural world is 'a complex of dynamic life processes to appreciate and respect' (Tucker, 2003: 220). As Zhuang Tzu, another major Taoist thinker (1994) states: 'The heaven and earth were born with me together, and the whole creation and me is one unity' (Tian-di-yu-wo-bing-sheng erh wan-wu-yu-wo-wei-yi). Nature is the basis of nourishing individual life and achieving harmony with nature is the ultimate goal for the Taoists. While the Confucians emphasizes the importance of human action, Taoism value simplicity and spontaneity in individuals and in human relations, arguing that one must withdraw from active involvement in social and political affairs in order to be in consonance with nature. According to Cheng (2003), the nature of the Tao is significant in Lao Tzu's saying: 'The Tao constantly does nothing and yet everything is being done' (Tao-chang-wu-wei erh wu-pu-wei). It means that 'all things come into being on their own accord' (p. 227). Taoism is primarily concerned with human spontaneity, individual freedom, and laissez-faire government. It is seen as a form of self-destruction for man to conquer nature and exploit it (p. 226). For Tucker (2003: 220-1), the Taoist stress on

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u.ac.jp/~acmuller/contao/mencius.htm (last accessed 05/05/04).

noninterference with nature or interaction with nature in a far less exploitive manner makes an important contribution to contemporary environmentalism.

The essence of the teaching of the Buddha, the 'enlightened one', is contained in the Four Noble Truths. The first noble truth is that life consists of suffering as the Buddha's diagnosis of the human condition. The second is that suffering is caused by desires. Thirdly, there is way out of suffering. The fourth claims that the way is through the Eightfold Path of right opinions, right thought, right speech, right conduct, right effort, right mindfulness, and right concentration. The Buddhist tenets of nonviolence, compassion toward all creatures, and the interconnectedness of all phenomena in the universe have significant potential ecological implications (Foltz, 2003: 161-2). Gross (2003: 164) also argues that Buddhist tradition provides a basis for promoting environmentally sound lifestyles and discouraging the excessive consumption and reproduction that she sees as environmentally destructive.

Buddhism was introduced into Taiwan in the late 16th century. Over the past decade, television lectures on Buddhism have begun to draw large crowds. According to Lin (1999), Taiwanese Buddhists construct their environmental concerns through Buddhist Masters' reinterpretations and lay Buddhists' social practices. The Buddhist-centred organisations demonstrate a special spiritual dimension in Taiwan's environmental movement that was rarely found before. It includes Dharma Drum Mountain's 'Pureland on Earth', and the Life Conservationist Association's 'Life Respecting' and Tzu-Chi Charity Foundation's 'Cherishing Good Fortune'. 'Cherishing good fortune' implies that once you cherish your surroundings, you are willing to protect the status quo. For Buddhists, 'all sentient beings are intimately interrelated' (Neefjes, 2000: 11). Lin (1999) argues that the social practices of lay Buddhists not only enrich and reshap the institutional definitions of 'Huan-Bao'

(literally environmental protection) but also help to create individual identities. The distinctive interpretation of 'Huan-Bao' by each Buddhist organisation and associated social processes manifest a new developmental stage of Taiwanese Buddhism characterized by 'rationalization, secularization, and contextualization'.

To summarize this section, the Yami traditional beliefs and practices encourage reverence for nature. Confucianism, Taoism and Buddhism are also showing a strong environmental commitment. This kind of worldview or environmental philosophy reflects that human, nature and the whole creation are 'one unity' that cannot be separated. The ecological themes in the Yami and Taiwanese worldviews provide resonance for the conception of environmental justice that move away from the separation between the human and the nonhuman world to stress human-environment interactions in residential settings, workplaces and playgrounds. An interesting question to pose here is whether these similarities and differences in the Yami and Taiwanese traditional thought, teaching and practice might lead to cross-cultural similarities and differences in their viewpoints about nuclear waste dilemmas and conflicts about the conception of environmental justice (see Chapter 4 and 6).

Key Chinese terms

Owing to the particular Yami and Taiwanese worldviews and philosophy, it is necessary to clarify some Chinese terms that are given particular interpretations different from the way they are used in the West. As mentioned in Chapter 1, Mandarin Chinese is the official language and is taught at schools. Many of the Yami young generation and other indigenous peoples can speak fluent Mandarin.

Huan jing, the mandarin translation for environment, means the conditions that surround one, the synthesis of space, or resources and other relative things affecting

the living of human beings and other creatures. But this simply reflects the surface meaning of the environment. According to Cheng (2003: 226), the surrounding world indicates not only individual things as entities but also 'a many-layered reality such as heaven and earth in a macroscopic enfoldment' when embedded in Chinese cultural contexts. The deeper meaning of *huan jing* implies that environment is active life and more than the visible and the tangible, which cannot be simply a matter of externality or material conditions. This deep meaning of environment reflects a distinction between Western and the Chinese assumptions about nature. *Zi ran*, the mandarin translation for nature, means man's environment. In Chinese tradition, *zi ran* is 'a process of continuous production and reproduction of life' rather than a work of production by God. Instead of the external relation of man to his surroundings based on a separation between humans and nature in the modern West, *huan jing* implies 'the internal relation of man to his surroundings based on an integrative interdependence and a harmony between man and the world' (Cheng, 2003: 225).

Zhen yi is the mandarin translation for 'justice' or 'just'. *Zhen* means correct, true or right; *yi* means rightness or appropriateness. The concept of *yi* is generally regarded as central to Confucius' thinking and a basis for the social system. *Zhen yi* has a variety of meanings including equity; generally acknowledged truth; with no partiality; fair treatment; fair judgement. The term can be defined in different ways accord to different situations. *Bu zheng yi* (*Bu* means 'not' or 'no') translates as 'injustice' or 'unjust'. For Taiwan, environmental justice (*huan jing zheng yi*) is a term learned from the West as Taiwanese people tend to use the word *huan jing* and *zheng yi* separately. Despite the presence of similar concepts of justice in the Taiwanese tradition, the different concept of environment (*huan jing*) raises the question of how

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environmental justice (*huan jing zheng yi*) is regarded in different cultures (see Chapter 6).

The public and stakeholders commonly use the term *huei kuei jin*[33] during environmental dispute negotiation. In Chinese, *huei* means back, *kuei* means feedback or payment, and *jin* means fund or money. *Huei kuei jin* means the fund or payments particularly offered to local community by the potential pollutant industry voluntarily or in response to the request of affected local residents. The term tends to imply a reward for the local community, with slight implications of compensation. The huge amounts of payments offered by Taipower for the local community on Orchid Island is called *huei kuei jin* by Taipower, the Island Administration and the majority of Orchid Islanders. However, some Yami professionals tend to call it *pei chang jin* (see chapter 4). In Chinese, *pei chang* means to indemnify, and *pei chang jin* means the fund or expenses to pay back for others' loss caused by one's behavior. The other term *bu chang jin* means compensation, which is very close to *pei chang jin*. The term *bu chang* is usually used in the situation when something wrong has done and loss occurred, while *pei chang* further highlights the loss, damage or injury suffered.

The different terms used by people represents different perception of the relation between Taipower and local community, though it refers to the same compensation or payment. For some Yami, Taipower's dumping of nuclear waste on Orchid Island has caused adverse impacts or loss, so the payments offered by Taipower imply indemnification for the tribe. For Taipower, the land-rent money for nuclear waste facilities (compensation) has been paid every year, based on a lease between Taipower and Orchid Island Administration. Taipower adopts the term *huei kuei jin* to refer to

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[33] For example, the Chinese Petroleum Corp. (CPC) provided 0.5 billion NT dollars for the community of the targeted site of Wu Refinery during the process of reconciliation, in order to avoid local resistance. The payment is in the name of huei kuei jin. See Yeh, C. Y. (2002). *Environmental Policy and Laws*. Taipei: Yuan Zhao. P. 33. (In Chinese)

the payments, because its literal meaning would not imply that actual harms or negative consequences of the nuclear waste repository have occurred (see Chapter 4).

Research methods

As noted in Chapter 1, there is a need to understand more clearly how members of the local community perceive nuclear waste dilemmas and environmental justice issues. In order to answer the research questions mentioned in Chapter 1 and the insufficiency of any single research method, I employ qualitative methods including focus group methods, archival analysis, participant observation and informal interviews. Before the introduction of these methods used in the thesis, I will discuss the inadequacy of currently dominant research approaches to the public perception of the nuclear waste repository or nuclear power plants in Taiwan, and the problem of using quantitative research to study environmental justice.

The problem of currently dominant research approaches

Existing Taiwanese research on the public perception of the nuclear waste repository or nuclear power plants has been dominated by quantitative approaches. The most significant of these surveys is that commissioned by the Atomic Energy Commission (AEC). For example, the AEC survey (1993) carried out by ROC Opinion Polls Association used questionnaires to measure Yami attitudes toward the nuclear waste repository. The results based on the data collected from a representative sample of 487 Yami residents show that 92% of the respondents oppose the nuclear waste repository and 30% insist on protesting to solve the problem. For the Yami opponents, the impacts of the nuclear waste repository that lead to their objection include: psychological effects (29.2%), human health (25.1%), environmental

pollution (25.1%), radiation threats (18.7%) and the tribal land being occupied by Taipower (1%). The survey concluded by suggesting the establishment of a professional public relationship division working on communication.

Similarly, Kung (1997) investigates the perceived risks of the public in general regarding nuclear waste transportation from nuclear power plants to Orchid Island or the undecided permanent storage site by the questionnaires. It shows that over half of the general public respondents regard nuclear waste transportation as safe. They are most concerned with the negative environmental impacts and human health, with social-economic concern ranked third. The public tends to rely on the scholars and experts in the nuclear field, while the reliability of the governmental institutions falls to last place. But he does not explain why the respondents think as they do. Li (1999) undertakes a survey to examine public risk perception toward nuclear power facilities. The main finding is that only 39% of the residents living nearby nuclear power plants No. I and II favored the construction of the fourth nuclear power plant, compared with 93% of the Taipower employees. Local residents' risk perception toward nuclear power operation and nuclear waste were significantly higher than that toward other risks such as smoking, traffic accidents and food poisoning, while the risk perceived by the Taipower employees in respect of nuclear power operation and nuclear waste was the least.

These public attitude and opinion surveys can cast light on the Yami and the Taiwanese public's expressed levels of concerns about nuclear waste issues and nuclear power plant operation, and the extent of factors associated with respondents' risk perception. However, such quantitative research cannot provide rich accounts of people's particular felt experience and environmental values, and of how people understand nuclear waste dilemmas. As Wynne et al. (1993: 27) argue, quantitative

methods such as opinion surveys have a difficulty in capturing the complexity of people's views and positions, and often impose prior assumptions that cannot be tested. The results of such research methods tend to be over-interpreted and neglect the social, historical and psychological factors that play an important role in forming public feeling of risk. Macnaghten et al. (1995: 14) also criticize quantitative research on public perceptions for its focus on surfaces and its failure to deal sufficiently with public ambivalences and environmental concerns in their wider social and political setting.

On the other hand, a large proportion of research on environmental justice tend to employ a quantitative, statistically oriented approach exploring the distribution of environmental hazards and benefits, and evaluates the importance of proposed factors or hypotheses for the explanation of the distribution (e.g. United Church of Christ, 1987; Bullard, 1983; Mohai and Bryant, 1992). These studies provide important information about the existence of environmental injustice and identify important and possible patterns or explanatory factors of these inequalities. However, a sole focus on present distributions tends to neglect the historical and contemporary structures that created them (Turner and Wu, 2002: 21), and might provide an overly simplistic and narrow explanation (Pulido, 1996).

Some researchers take the problem of environmental injustice as given and seek to understand how activists and communities engage in struggle and change by using qualitative approaches (Turner and Wu, 2002: 23). For example, Peña (2003) presents a site ethnography focused on different actors' environmental justice struggles that linked land and water rights with issues of ecosystem management and justice. These studies provide richer accounts than the quantitative research by shedding light on the

social dynamics of particular situations, on complex issues of environmental justice and on how people deal with these environmental injustices.

While recognizing the limits of a sole focus on the distributive dimension of environmental burdens discussed in Chapter 2 and the problems of quantitative approaches to public perceptions and environmental values, this research attempts to provide new insights into environmental justice discourses and the risks of the nuclear waste repository through qualitative methods that are sensitive to cultural difference and particular contexts. I introduce the research methods used in the thesis as follows.

Focus group methods

Focus groups have been recognized as a valuable methodology to explore people's attitudes, opinions and concerns (Morgan, 1988; Kitzinger, 1994; Litosseliti, 2003). The method is widely used to gather data in many disciplines, including environmental and health studies, sociology, geography, linguistics and feminist research (e.g. Kitzinger, 1995; Hunt et al., 2002; Wilkinson, 1999). According to Kitzinger and Barbour (1999: 4) focus groups are:

> ideal for exploring people's experiences, opinions, wishes and concerns. The method is particularly useful for allowing participants to generate their own questions, frames and conceptions and to pursue their own priorities on their own terms, in their own vocabulary. Focus groups also enable researchers to examine people's different perspectives as they operate within a social network. Crucially, group work explores how accounts are articularted, censured, opposed and changed through social interaction and how this relates to peer communication and group norms.

Waterton and Wynne (1999) emphasize similar qualities of this method and argue that focus groups can access community views. Using the case of the nuclear industry in West Cumbria, they demonstrate that focus groups can uncover a rich sense of

community views on nuclear risks that would be impossible to generate through quantitative polling. For example, the sharing of jokes in focus groups can provide clues about 'the way that locals experienced and handled risk' (p. 133). In constrast to interview or quantitative analyses, focus groups permit wide-ranging interaction in which people's attitudes take shape and change through the opportunity to discuss issues (pp. 135-6). Moreover, the focus group can reveal the constant negotiation of the research-researched relationships and the identities of the participants in the context of the groups (p. 139).

The selection procedure for focus groups aims to reflect a broad cross-section of the local population rather than seeking a statistically representative sample of the public or to identify public opinions in any definitive sense (Macnaghten et al., 1995: 19). The number of participants in a group is not absolute. According to Kitzinger and Barbour (1999: 8), the ideal number between 8 and 12 participants for market research is too large for many sociological studies, and some researchers prefer to work with groups of 5-6 participants, or even as few as three. Facilitators need to clarify ambiguous statements and ensure that interaction between participants is encouraged (Kitzinger and Barbour, 1999: 4). It is important that focus groups should be conducted 'in a permissive, non-threatening environment' (Krueger, 1994: 6).

Since focus groups provide a useful way to access to community and complex views, focus group method is particularly suited to the present study of exploring people's attitudes toward nuclear waste and complex concepts of environmental justice. The design and conduct of the focus groups in the present case is described below.

Constitution of the focus groups and selection procedure

The selection of participants for the focus groups is based on the socio-economic and cultural situations on Orchid Island. To ensure the participants are representative of significant fractions of the society of Orchid Island, the criteria for focus groups selection include:

1. Type of occupation: to reflect the typical economic activities and social structure within Orchid Island.

2. Ethnicity: to reflect the differences between the Yami and Taiwanese migrants.

3. Geographic location: to hold the groups at six distinctive coastal villages spread throughout Orchid Island: Yayo, Yuren, Hongtou, Langdo, Dongqing and Yeyin. (see Figure 3.1 for location map). The influence of Taiwanese society is more obvious on three villages,[34] Yayo, Yuren and Hongtou, where there are large numbers of non-Yami residents or tourists.

4. Gender: to include anapproximately equal ratio of male and female in the groups to reflect the views of men and women.

5. Age: to include people of different ages. Yami fishermen and housewives are usually elders, while most of the Yami professionals are young or those in the middle age. The recruitment of Yami teenage students can avoid the views of the younger generation being under-represented.

The focus groups comprise Yami fishermen and housewives, Yami professionals, Taiwanese professionals, Yami teenage students and Yami Taipower employees on Orchid Island. A total of nine groups were recruited in different settings as follows.

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[34] The public offices and council are in Yayo and the nearby harbour is the main traffic hub between Orchid Island and Taiwan Island. The airport is in Yuren and most tourists visit Orchid Island by air. The post office, health station and nuclear waste repository are in Hongtou and the nearby harbour was built to unload nuclear waste from Taiwan to be stored on the island.

a. Yami fishermen and Housewives (two groups)

According to the distribution of work in Yami society, fishing is the main responsibility of men and is central to the Yami economy. Farming, which supplements the Yami economy, is mainly performed by the women in Yami society, and involves activities such as planting, mowing and collecting. Women also take care of the housework. According to my general observation of Yami social life, men are busy with fishing to meet daily necessity and not good at expressing themselves. A group of only fishermen would be perhaps the hardest to moderate, thus it would be better to include an equal ratio of women to stimulate men to talk. Two groups of fishermen and housewives from two villages were thus selected to reflect the main features of Yami society. One group was held in Yuren where the Yami contact Taiwanese frequently and where the tourist industry is prosperous. The other was held in Yeyin where local people experience less Taiwanese influence and more rely on the traditional economy.

b. Yami Professionals (two groups)

Besides traditional fishing and farming, those Yami who have experience of studying or working in the cities of Taiwan tend to be involved in teaching, administration, church ministries, art workshops, charity foundations and the tourist industry. The Yami professionals have more opportunity to contact outsiders or work with Taiwanese colleagues. Two groups of professionals were selected from three villages: Yuren, Langdao and Dongqing. The ratio of men and women in these groups was approximately equal.

c. Taiwanese professionals (two groups)

The Taiwanese professionals on Orchid Island are involved in the administration, health station, teaching, charity foundations and the tourist industry. It is common that married professionals come alone, and their families stay in the cities of Taiwan because some family members could not get used to the life here and want their children to experience education in the city where there are more educational resources. Therefore, it is difficult to find Taiwanese housewives on the island. Two groups of Taiwanese professionals were selected from Yayo and Yuren where a large numbers of non-Yami are gathering around these areas. The ratio of men and women in these groups was approximately equal.

d. Yami teenage students (two groups)

Besides the elementary schools on each village, there is only one junior and senior high school in Langdao. After graduating from the high school, most young Yami students prefer to seek jobs or accept higher education in the cities of Taiwan for more job opportunities and better educational resources. In order to know the concerns of the young generation, two groups of students, aged 13-15, were recruited from this high school. The ratio of boys and girls in these groups was approximately equal.

e. Yami Taipower employees (one group)

The nuclear waste repository is in the village Hongtou, the south part of the island. Longmen harbour was used for the shipment of nuclear waste only. The repository is open for visiting and the employees are responsible for checking safety and communicating with local people. The Taiwanese employees tend to act as engineers and managers, while the Yami serve as apprentices, administrative personnel and

cleaners. One group of Yami Taipower employees was selected to reflect the opinions

of workers in the nuclear industry.
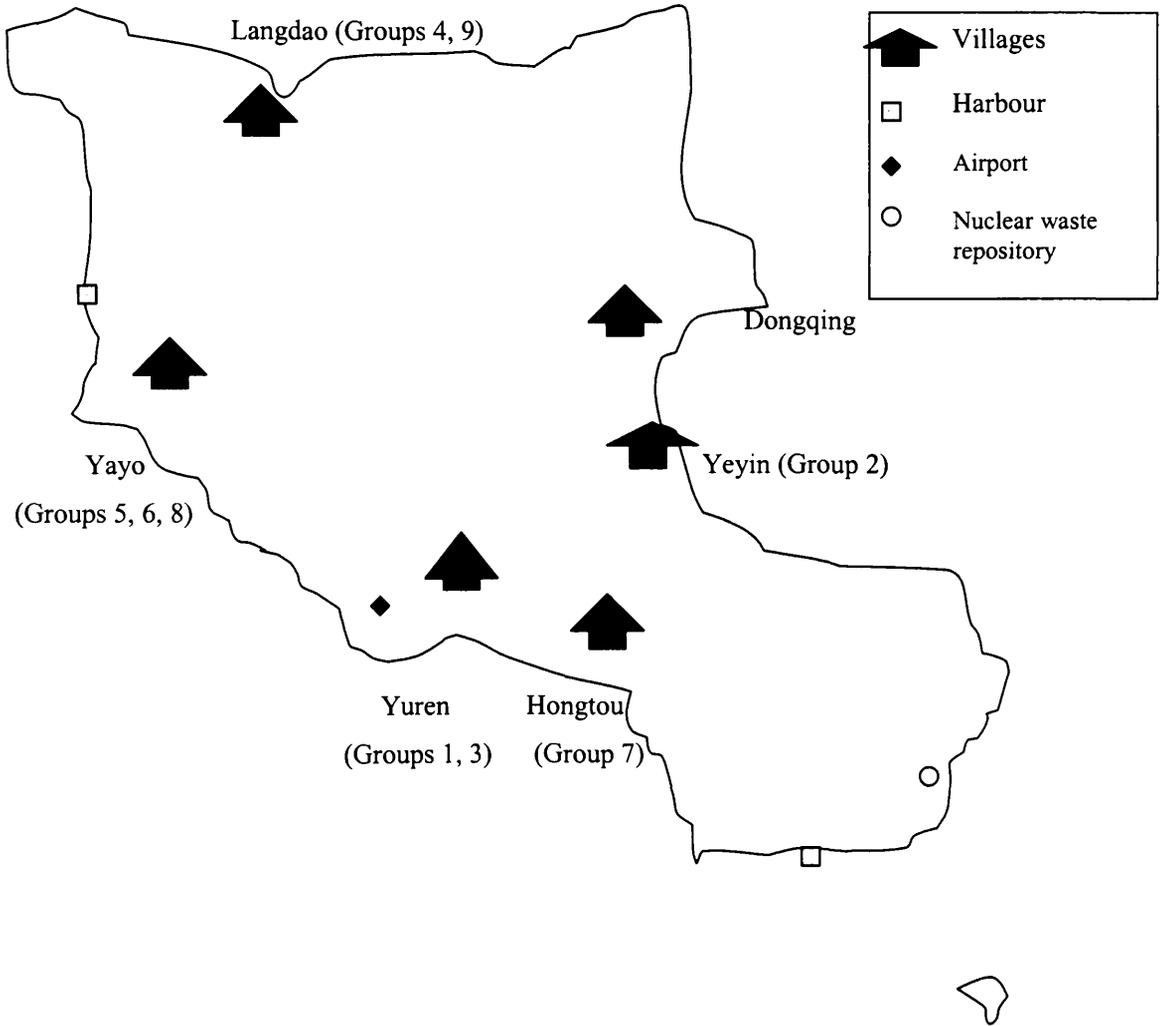
Figure 3.1 Location map for six villages on Orchid Island and the focus groups held
Note:
Group 1, 2: the Yami fisherman and housewife groups
Group 3, 4: the Yami professional groups
Group 5, 6: the Yami teenage student groups
Group 7: the Yami Taipower employee group
Group 8, 9: the Taiwanese professional groups

I recruited the focus groups; the snow balling method was used to ask familiar local residents to invite their friends or those who were qualified to attend the groups. The participants were not given inducements to attend the group because it might lead to the participants' worry that the research was commissioned by Taipower or the Government. The Yami or the Taiwanese participants might feel that they need to say something good about Taipower if they agreed to receive the inducements. Refreshments were provided for participants. The Yami are willing to accept and enjoy it because most of the Yami live economically and seldom buy cakes, biscuits and chocolate, etc.

The groups all consisted of 7-9 participants except the group of Yami Taipower employee that contained 5 participants because there are only a few Yami working for Taipower and they need to take turns off. Groups were held in a variety of locations including schools, churches, conference centers of the institutions and homes in the six villages. Table 3.1 shows the nature and constitution of the focus groups:

Table 3.1 Constitution of the nine focus groups

The groups	The characteristics of participants
The Yami fishermen and housewives group 1 3 male, 5 female from Yuren village Held in Yuren	Spent most of their life on the island A semi-subsistence lifestyle Aged 40 or above Attend church regularly Have more opportunity to contact with tourists and outsiders
The Yami fishermen and housewives group 2 4 male, 5 female from Yeyin Held in Yeyin	Similar to the previous group, but experience less influence of market forces, tourists and outsiders
The Yami professional group 1 2 male , 6 female from six villages Held in Yuren	Teachers and those working in charity foundation Well-educated, aged 25-45
The Yami professional group 2 5 male, 2 female from Langdao, Dongqing Held in Langdao	Are involved in public service, teaching, church ministry, art and cultural workshop Have experience of education or working in the city of Taiwan Aged 30-50
The Yami teenage student group 1 4 male, 5 female from six villages Held in Yayo, the high school	All from the only high school on the island, aged 13-15 Some were raised by grandparents as parents work on Taiwan island Stay in the dorm during the week except those who live near the school
The Yami teenage student group 2 4 male, 5 female from six villages Held in Yayo, the high school	All from the same class Aged around 15
The Yami Taipower employee group 3 male, 2 female from different villages Held in Houngtou, the repository	Have the experience of studying or working on Taiwan island
The Taiwanese professional group 1 5 male, 3 female from Yayo, Langdao Held in Langdao	Civil servants and teachers Have stayed here for 1-5 years Some of them are single, others have family on Taiwan island and visit their families on leave
The Taiwanese professional group 2 5 male, 2 female from Yayo Held in Yayo	Are involved in public service, teaching and tourist industry Have stayed on Orchid Island for from 1 to more than 10 years

Focus group procedure

Each focus group is carefully designed, and is divided into various areas of discussion using a planned topic guide (see Appendix I for the complete topic guide). The topic guide functions as an aid to ensure that the participants' opinions and perceptions on a defined area of interest could be captured. It begins with a brief introductory section, in which participants said what concerned them most on Orchid Island. The central discussions are issues concerning the nuclear waste repository and their conception of environmental justice. The participants were finally asked for any feedback or any issues they would like to share with others. Table 3.2 below shows the main themes under scrutiny during the discussions:

Table 3.2 The structure of the focus groups topic guide

Theme	Content
Welcome	General explanation of the research and personal introductions.
Warm-up questions	Brief sharing in what concerns them most about the Orchid Island.
Public perception of nuclear waste and factors shaping risk perception	Explore whether the participants think nuclear waste repository has any effects on the environment, human health and future generations, in what way, and what makes they say that; where they think nuclear waste should go and why; explore how they view what the compensation means to them.
Public participation in the decision-making process	See how people express their opinions on the issue of nuclear waste management; what they think about who should make decision, the role of the public in decision making; how they think about the Government or Taipower; what to be done to improve the decision-making process.
The conception of environmental justice	See how the term 'environmental justice' is recognized by the participants; how they think about the reason why nuclear waste has been stored on Orchid Island; whether they join the campaign against nuclear waste repository and for what reasons; their views on the Yami anti-nuclear waste movement and environmental justice movement
Conclusion	Let the participants say anything they like to share and get feedback.

The nine focus groups were conducted during the first two weeks in December 2002. Each group discussion lasted approximately one and a half hours. Two groups of fishermen and housewives were aided by two local translators, since some elderly participants can only speak simple Chinese. The groups were all moderated by the researcher, with one assistant responsible for recording and taking notes. In each focus group, I encouraged every participant to express their own experiences, generate questions, and talk to each other. Also, I ensured that the overall research agenda was covered. The groups were tape recorded for further analysis, except one Yami professional group and two Taiwanese groups because the participants indicated that they would feel uneasy and not genuinely express their views if the discussion was recorded on tapes.

Analysis of the transcripts

The nine focus groups provided large amounts of rich and dynamic data, including the participants' life experiences, views, feelings, languages, jokes, episodes, the interaction between participants, and so on. I displayed and compared group discussions of the main themes, and examined how these differences related to the characteristics of each group. The analysis also included examining individual opinions and disagreement between participants.

General observation

Most of the Yami participants felt good when they were told about the researcher's interest in listening to their concerns. Nuclear waste problems are central to all the Yami groups, but they are also concerned with a wide range of public affairs. They appeared genuinely to have enjoyed the focus group process, though some of

them seemed a little shy and were quiet at the beginning. In general, women were more talkative than men in the Yami groups, but this was not so obvious for the teenage student groups. The tradition of respect for the elder in the Yami society is significant in the fishermen and housewives groups, in that the elder was usually the one who talked first.

The young Yami participants tended to make jokes for fun, and there was considerable cynicism expressed about nuclear waste and Taipower. The elder participants tended to speak in a serious way, and some of them expressed a strong identification with Orchid Island and the tribal tradition, faith in God and Christian thoughts. The Yami groups appeared passionate to express their opinions and sometimes their anger and helplessness were significant. The Yami professional groups tended to reflect diverse opinions. It is rare to find the Yami participants argue against others on substantial issues such as the position against nuclear waste, although a few participants recognize Taipower's positive impact on the local economy and criticize the tribesmen.

Most of the Taiwanese participants felt free to express their opinions when they were told the transcripts would be anonymous. They tend to enjoy the simple life on Orchid Island and expressed their concerns about local affairs. They recognized the divergence between the Yami and Taiwanese groups and tended to be critical of the Yami tribe, while some expressed their sympathy for the Yami.

Archival analysis

I collected the relevant books, journals, government publications, newspapers, maps and photos. Archival analysis helped to integrate materials into the research, and to support, supplement, and cross-check the correctness of my interpretations of

situations and releated arguments. It strengthened the reliability of data collected by other methods.

Participant observation

There was a public meeting organized by the Island Administration and Taipower on 7 December 2002 surrounding the issue of Taipower's land lease renewal for nuclear waste facilities, as the lease on Orchid Island was to expire on 31 December 2002. Taipower attempted to explain to Orchid Islanders about the failure to remove the repository, seeking the Yami's understanding and consent to extend the lease for next nine years. I participated in the public meeting and observed the positions and interactions between the local residents, the representatives of Taipower, and the representatives of the villages. Besides the Taipower representatives, the majority of attendants were Yami, including the Head of the Island Administration, the Orchid Island Land Inspection Committee, the elected Island Representatives, village leaders, and the Yami public. Only a few Taiwanese residents attended the meeting. The public meeting manifested the interaction between the local community and Taipower, and the way the Yami deal with crucial tribal affairs. My observation about the public meeting enabled me to discover more relevant materials, help me to interpret reality and increased the degree of validity of my findings.

Informal interview

Informal interviews with open-end questions were conducted when people on Orchid Island were willing to talk to me and express their opinions about nuclear waste disputes. Three interviewees were from Taipower: one was the head of the nuclear waste repository; the second one the administrator of the fossil fuel plant on

Orchid Island; and the third one the officer (also an engineer) who came to Orchid Island to participate in the public meeting in December 2002 and who is responsible for public communication. Two Yami interviewees were local church preachers who are important local opinion leaders. I also interviewed one doctor of the health center on Orchid Island who provided information about the Yami tribe health condition and the relationship between cancer and radioactive pollution.

Conclusion

This chapter introduced the particular socio-economic and cultural context of Orchid Island and the changes in Yami tribal life over time. It showed the characteristics of Yami spiritual beliefs and the Taiwanese religious traditions. Both the Yami and Taiwanese worldviews encourage respect for nature and recognize the unity of human, nature and the whole creation. This corresponds to the conception of environment in the environmental justice movement that stress on the interconnected human-environment relationship (see Chapter 2).

Considering the inadequacy of currently using quantitative research on public perception of nuclear waste repository and issues of environmental justice, the main research methods adopted in this thesis are focus group methods and archival analysis, supplemented by participant observation and informal interview. Focus groups used as the primary data collection method offers particular advantages in exploring the complexities of people's concerns, opinions and value systems.

Chapter 4 Public attitudes toward the nuclear waste repository on Orchid Island

This chapter explores the Yami and Taiwanese attitudes toward nuclear waste, and their differences in risk judgement and perceptions of related disputes over nuclear waste management in the context of Orchid Island. It includes four sections. The first examines local perceptions of the impact of the nuclear waste repository, and how differing perceived risk and knowledge of nuclear waste might relate to worldviews, culture, and historic and social experiences. The second explores the Yami and Taiwanese perspectives on the disproportionate radiation risk suffered by Orchid Islanders. The third discusses the framing of risk issues and the siting conflicts, including the Yami and Taiwanese views on where to locate nuclear waste and the factors that affect the diverse positions they have adopted. Finally, it explores the Yami and Taiwanese interpretations of the concept of compensation, and their views on possible better ways to manage the compensation offered by Taipower.

Local perceptions of radioactive risk

Perceptions about specific issues such as water pollution, toxic chemicals, or nuclear power plant might be influenced by broad worldviews about the relationships between humans and nature, environmental beliefs, or prior beliefs about risk (Douglas and Wildavsky, 1983; Vaughan and Nordenstam, 1991; Dake, 1991). The cultural contexts in which risk talk occurs and within which risks are framed cannot be ignored. As Dake (1992: 21) argues, 'it is culture that provides socially constructed myths about nature – systems of belief that are reshaped and internalized by persons, becoming part of their worldviews and influencing their interpretation of natural

phenomena' (p. 21). Irwin (2001: 110) also argues that risk understandings have a close relationship with cultural worldviews, and that risk concerns are likely to reflect established ways of viewing the world in which one lives. As discussed in Chapter 3, the Yami and Taiwanese migrants on Orchid Island differ in culture and worldviews. The Yami and Taiwanese perceptions of nuclear waste might be connected in some way with their culture, and particular historical and social experiences.

The empirical study on Orchid Island shows that local perceptions of the impact of the nuclear waste repository manifests great divergence between the Yami aborigines and Taiwanese migrants. The Yami groups tend to attribute overarching negative life experiences to the nuclear waste repository, including poor harvests, water and soil contamination, decrease in the amounts of crabs and fish, coral whitening, and higher rates of cancer or illness. The majority of the Yami groups express their hate for and anxiety about nuclear waste, while the Taiwanese groups tend to regard the nuclear waste repository as safe and express reliance on expertise.

In the rest of this section, I first discuss the way the Yami groups (e.g. theYami fisherman and housewife groups) attributed overarching negative experiences to the nuclear waste repository. Secondly, I look at the Yami's lack of trust in institutions. Thirdly, I explore the ambivalence of some Yami professional participants and the Yami Taipower employee group. Fourthly, I look at the way the Taiwanese groups downplayed risks.

1. Attributing overarching negative experiences to the nuclear waste repository

The Yami fisherman and housewife groups, the Yami professional group in Yuren village, and the Yami teenage student groups tend to attribute almost any

negative daily life experience to the impact of the nuclear waste repository. The Yami fisherman and housewife groups provide detailed narratives about the adverse impact of the nuclear waste repository on their daily lives, and express their anxiety and hatred of nuclear waste. The Yami fisherman and housewife groups recognize that radiation is intangible, but they are worried about visible changes in the environment, such as poor harvest and the decrease of the amounts of crabs. The extract below from the Yami fisherman and housewife groups from two villages reflect that the Yami life and health are inseparable from those changes of the environment:

Mod Do you feel that the nuclear waste repository on the island has any impact on the environment?

F1 It has polluted our Orchid Island. The leaves of sweet potatoes and taro do not grow as big as before. Sometimes sweet potatoes cannot bear fruit. The soil must have been contaminated as well as the water.

F2 We, almost all the Tao [the Yami] on the Island feel afraid of nuclear waste. We know that the radiation from nuclear waste is something that people cannot feel. But we know that those who were healthy have become ill since the nuclear waste came.

F3 Nuclear waste has influenced our water, crops, the elders like us, and the health of Tao. Therefore, we hate this nuclear waste extremely.
(The Yami fishermen and housewives, group 1)

F1 Yes. Previously, I just took half hour to catch enough crabs to fill a basket, and then I came back home. But now it takes me two or three hours. This is an effect of nuclear waste.
(The Yami fishermen and housewives, group 2)

The Yami's fear of nuclear waste has been linked to the fearful image of 'evil ghosts', the origin of misfortune and disaster in their traditional beliefs. The first time people heard the connection between nuclear waste and evil ghosts was in February 1998 when hundreds of the Yami living in Taipei, led by the Yami Youth Association, gathered in front of Taipower headquarters and asked for the removal of nuclear waste

from Orchid Island. The series of demonstration was called 'Chasing away Orchid Island's evil ghosts.' According to Chi (2001: 145), the linking of nuclear waste with the Yami's evil ghosts is an effective strategy for the Yami anti-nuclear waste movement. He argues that the symbolic linkage helps the Yami apprehend the meaning of nuclear waste because the tribe does not have a terminology in their language to name nuclear waste. Those Yami who lead their campaign against the nuclear waste repository might deliberately use the language of evil ghosts as a united code to persuade other tribesmen, but my research shows that some Yami fisherman and housewife participants did see the nuclear waste as evil ghosts.

One Yami fisherman and housewife group uses metaphorical language and supernatural images to express their idea about nuclear waste. Some Yami fisherman and housewife participants tend to represent radiation risks as a threat or a disaster. The elderly Yami express their concerns about the well-being of future generations and the crisis of cultural loss. They worry that the tribe would disappear in the near future if the nuclear waste repository remains (see Chapter 6). As one elder fisherman states: 'what we, the elders, are worried about mostly is our future generations. How could they exist if the environment is polluted? If they suffered from pollution, how could you find the Tao [Yami] on Orchid Island? The health of the offspring is our greatest anxiety.' Some elder Yami really regard nuclear waste as evil ghosts and the tribe's common enemy, which might affect other Yami's view about nuclear waste. Once the linkage between nuclear waste and evil ghosts has been formed and accepted within the tribe, nuclear waste could become the target of complaints and take all of the blame. As mentioned in Chapter 3, the tribe has experienced the impact of dynamic forces released by modern society, and cleavages among the Yami tribesmen have become more significant, such as the exodus of young people and the gap

between generations. It could bring the six tribal villages together to work on the defense of the tribe and their homeland by proclaiming the fight against evil ghosts.

Traditionally, the Yami tribe needs to perform exorcism to battle against evil ghosts (see Figure 1.1), and magic or taboo plays an important role to guide the Yami behavior. Christianity has been gradually integrated into the Yami traditions and spiritual life recently (see Chapter 3). In *Magic, Science and Religion*, Malinowski (1954: 144) demonstrates the functions of religious practice in tribal society in response to uncertainty and argues that belief (in magic or religion) 'is closely associated with the deepest desires of man, with his fears and hopes, with his passions and sentiments.' Christianity is likely to enhance the Yami's courage to face the fearful evil ghosts. The extract below from the Yami fishermen and housewife group reflects the crucial function of Christianity in the way that the Yami deal with the nuclear waste problem:

F1   In the past, people here got illnesses when they were old, but now even young men
      suffers from illness. Although some of us get illnesses, those who believe in Jesus can
      get comfort. We pray God to exorcise evil ghosts... that nuclear waste could not hurt us
      anymore. This is our greatest hope, and greatest wish.
      (The Yami fishermen and housewives, group 1)

According to Douglas and Wildavsky (1983), perception of risk is a social process in which some risks are emphasized and others suppressed. They argue that how people choose which risks to take and which to avoid is a way to maintain the culture of the group. As they put it: 'People select their awareness of certain dangers to conform with a specific way of life; it follows that people who adhere to different forms of social organization are disposed to take (and avoid) different kinds of risk' (p. 9). Nuclear waste is not the only environmental or health problem on Orchid Island, as

some of the Yami participants also express concerns about the problems of litter, discarded cars, excessive drinking, and lack of medical resources. The impact of modern Taiwanese society and tourism on the Yami traditional life is considerable, but the Yami might not be able to explain the complexity of causes of the tremendous transformation of tribal life and changes of the environment. According to the interview with one local doctor about the health condition of the Yami during my fieldwork period, the majority of Yami cases of cancer are stomach or lung cancer, which are related to their traditional diet – dried salty fish, and other factors (e.g. smoking and excessive drinking). Cancers associated with exposure to radiation are not the main cases, such as leukaemia, breast and cervical cancers. The various problems on Orchid Island discussed above shows that nuclear waste could be seen as only one of the fearful evil ghosts for the Yami tribe.

For the Taiwanese professional groups, the Yami's opposition to the nuclear waste repository is connected to the tribe's exclusive climate toward anything foreign and outside. The Yami's overemphasis on the negative impacts of the nuclear waste repository is viewed as a way to maintain the traditional tribal life, as resistance to the continuous impact of industrialized civilization or the Taiwanese authority's dominance. As one man expresses, 'Local people might feel that the land is theirs, so they oppose everything foreign.' One lady says, 'My father is a mainlander [originally from Mainland China] and I was regarded as an outsider, although my mother is from the local people [the Yami].' Obviously, the Yami participants would regard me as a Taiwanese outsider. Even if some of the Yami fisherman and housewife participants are aware of other risks, they might not be willing to acknowledge that their traditional diets or tribal lifestyle would pose risks to Yami health. It raises a sense of tribal pride and cultural self-esteem when the Yami participants emphasize the tribal

heritage and the beauty of their homeland. Therefore, some risks are suppressed when the Yami participants consider the need to present the united front in the focus groups.

Like many of the Yami fisherman and housewife participants, some Yami professional participants provide similar perceived experience on the island, including increased incidence of cancer and illness, creatures' extinction, coral whitening, and fewer amounts of fish and shellfish. The Yami professional participants seem to be aware of other factors that produce changes in the environment, but the nuclear waste repository is seen as the main problem:

F1   The influence is tremendous. Many people get leukaemia, lung cancer and other diseases. No one got cancer and most islanders died a natural death before the nuclear waste came here.

F1   There were lots of small animals on the island when I was a child. But many of them become endangered or extinct, such as owls. It might have something with the effect of radiation.

M1 Now we can find corals turning white. Take the coast in front of our village for example – the amounts of fish and shellfishes decrease. We said it is because of nuclear waste, but…of course, some people might say that this is associated with global climate change. However, I feel it has something with the nuclear waste repository.
(The Yami professionals, group 3)

The Yami teenage student groups tend to describe nuclear waste as harmful in an exaggerated, playful way. The boys liked to speak cynically and make jokes. For example, they generally expressed amusement and laughed as a boy said, 'the children will be born as monsters in hundreds of years', 'the deformed fish', and 'a lot of cans in the repository'.[35] The Yami teenage student groups also express their fear that nuclear waste might leak into the sea, and it has become hard for them to catch fish now.

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[35] The barrels to hold nuclear waste look like the shape of a can in the supermarket.

2. The Yami's lack of trust in institutions

Distrust in Taipower and the Government was a significant theme in the Yami discussion on the risk of nuclear waste. There are various sources of information about nuclear waste issues on Orchid Island that might affect the local perceptions of nuclear waste. According to the Yami professional and teenage student groups, they could know the disputes over the nuclear waste repository Orchid Island, issues of siting, and how the outsiders look at the tribe by watching TV news, hearing from others, reading newspapers and Orchid Island Biweekly,[36] and the Internet. However, the Yami focus groups did not mention Taipower as an information provider and expressed distrust in Taipower.

According to Wynne (1980: 186), people cannot in any significant sense assess the 'factual' impacts of technology, and need to 'assess the institutions which appear to control technology.' Grove-White et al. (2000: 27) argue that any previous experience of the information provider (e.g. government regulator, manufacturer, and company, the non-governmental organizations) is a crucial element in people's judgments on multiple sources of information, and such experience can be treated as a basic feature of the information itself. The Yami's lack of trust in Taipower would be closely associated with the event when several thousands of the nuclear waste containers on Orchid Island were found to have rusted in the late 1980s. News about this accident worried the Yami that the leakage from the repository might have contaminated the soil and water of Orchid Island; and that contaminated water might has been released into the ocean, although the Atomic Energy Council commissioned the National Scientific Committee to carry out surveys of the coastal and near-shore area surrounding the storage facility and reported no leakage of radionuclides or

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[36] Orchid Island Biweekly is published by a charitable foundation on Orchid Island, which encompasses

obvious impact (Schafferer, 2001: 107). It was environmentalists that made the accident public. The Atomic Energy Council and Taipower have admitted the accidental discovery of some rusted nuclear waste containers and replaced those containers by new ones, but it strengthened the Yami's doubt about Taipower's monitoring and the attempt to hide unusual events from the tribe.

According to the interview with the head of the Orchid Island nuclear waste repository, Taipower has made efforts to enhance the communication of risk to the Yami, including the explanation of the influence of radiation on the environment or human health, visiting the Yami in daily life, holding activities in particular holidays, and supporting and joining in the Yami rituals. However, Taipower's communication of risk to the Yami has been treated with scepticism by the Yami fisherman and housewife groups, and some professional participants. As one housewife says: 'Taipower just wants to be "Mr. Generous", and makes you not to protest against nuclear waste, in order to let the repository operate smoothly.' The Yami professional participants exhibit a similar reaction to Taipower: 'Nuclear waste has caused harm and we are very angry. No matter how well the propaganda is, we will not accept it'; 'We have already know what Taipower will tell us. Everyone still gets ill or dies.' Another example is a Yami housewife's doubt about the results of the health check:

F1   Although we keep talking and continue to protest, we do not quite understand nuclear
      waste and nuclear energy. I had a health check once, but I really don't know whether
      the result is serious or not. The doctors said, 'It is OK. Your result is normal. You can
      be relieved.' But how could I know that they did not lie to us?
      (The Yami fishermen and housewives, group 2)

It shows that the Yami housewife's mistrust of Taipower or the Government derived from past negative experiences (see Chapter 1 and 3) and accidents have affected her

local news and tribal activities.

judgment on relevant information offered by other experts or the Taiwanese people. Those Yami participants' negative perceptions of nuclear waste and their blame nuclear waste for bringing a variety of misfortunes are relevant to their perceptions of Taipower or the authority that is seen as untrustworthy.

3. Ambivalence and the expression of uncertainty

Some Yami professional participants and the Yami Taipower employee group, unlike the Yami fisherman and housewife groups, did not exhibit a close link between risk perceptions and traditional beliefs. The past experiences of studying and working on Taiwan Island might be an important factor in their risk judgments on nuclear waste. One Yami professional group tends to be divided on the negative impact of the nuclear waste repository. The majority of the Yami professional participants think that people's suffering from cancer probably has something to do with the nuclear waste repository; however, a woman argues that the causes of cancer might involve the factors of eating habits and sanitation problems. The extract below from the Yami professional group reflects their uncertainty about the potential negative influence of the nuclear waste repository:

M1   I do not know the influence of nuclear waste on the environment. People say that radiation is what the eyes cannot see. But in the last three or four years, a few people suffered from cancer and died. This is probably related to the nuclear waste repository. Everyone is very worried about the suffering from possible bad influences.

F1   I think it may involve eating habits and sanitary problems. Some people indulge in smoking, wine and chewing betel nuts. The waste of pigs and goats would be a problem as well. But those who work for the repository seem to be healthy.

(The Yami professionals, group 4)

Ambivalence and expressions of uncertainty about situations of risk are significant in the Yami Taipower employee group. The Yami Taipower employee participants express themselves more cautiously and tend to use vague words like 'maybe', 'probably' and 'uncertain'. They are uncertain about whether the nuclear waste repository has direct relations with cancer or environmental contamination, and indicate that these problems are related to other factors such as changes of circumstance, eating habits, and lack of medical information:

Mod   Do you feel that the nuclear waste repository on the island has any impact on the environment?
M1   It needs a medical basis. We should not believe groundless talk.
F1   The rate of cancer is higher here. Maybe…
M2   As civilization comes, lots of germs and disease increase.
F1   It probably relates to eating habits. People here often eat salt and dried foods, like dried flying fish. This probably has something to do with those illnesses.
F2   This is hard to say... I don't know.
F1   People had no money to see the doctor when they were ill in the past, and they died without knowing what disease they had got. Many people might have died of cancer in the past [before the nuclear waste came]. It is uncertain.
(The Yami Taipower employees, group7)

It could be argued that the Yami Taipower employee groups show more ambivalence about radioactive risk because they face not just their Taiwanese colleagues' scientific views on nuclear waste but the Yami tribesmen's attributing daily negative experience to the repository. On the one hand, their Taiwanese colleagues would tell them about the safety of the repository. But, on the other hand, their families would say that some Yami have got cancer because of the nuclear waste. The Yami Taipower employee participants react to this discrepancy between Taipower and the tribesmen by emphasizing that there are too many voices or information and one needs to judge whether the information is true or not.

How would the Yami Taipower employees treat the conflicting information on nuclear waste offered by the tribesmen and Han people? Issues of trust have been seen as crucial in affecting public attitudes to risks to the environment and to public health and safety (e.g. Grove-White et al.1997). In Wynne et al.'s (1993: 36) study of public perceptions of the nuclear waste industry in West Cumbria, a strong sense of ambivalence about dependency on the nuclear industry among the community, meant that trust in the nuclear industry and the government is viewed as 'a necessary *condition* for satisfactory existence in the area' rather than something as 'authentically felt'. As Wynne (1995: 381) argues, 'If people feel they are dependent on particular institutions for their safety or other valued conditions, they may feel the need to act as if they trust them, even while skeptically monitoring their behavior for evidence to support or undermine the "trust hypothesis".' For the Yami Taipower employee participants, reliance on Taipower's surveillance and adopting the expertise might be seen as necessary for them to make a living. But on the other hand, other Yami tribesmen's blame of the repository is likely to make them feel uneasy about the predicament. The Yami Taipower employee participants point out that they would not talk about nuclear waste disputes to their Yami friends in their daily life, which could avoid the result of psychological disturbance. Also, they avoid criticizing the tribesmen or trying to influence the notions of those Yami who regard nuclear waste as fearful, in order to maintain the existing social network or affiliation and to avoid possible rows.

There are a variety of different coping strategies, action- and emotion-focussed, that people would use towards the presence of hazardous sites (Wakefield and Elliott, 2000: 1151). Giddens (1990: 134-7) identifies four coping strategies that individuals adopt in responses to environmental risks: *pragmatic acceptance, sustained optimism,*

cynical pessimism and *radiacal engagement*. An attitude of *pragmatic acceptance* is characterized by 'numbness' towards the issue and withdrawal into everyday life, while *sustained optimism* is maked by continued faith in science and experts, regardless of their credibility. An attitude of *cynical pessimism* leads to the use of black humour as a protective mechanism, and those who respond with *radical engagement* attempt to contest the social and institutional systems creating environmental risk in their community. The Yami fisherman and housewife groups tend to rely upon exorcism or prayer and engage in campaigning in response to the threat of the nuclear waste repository, while an attitude of *pragmatic acceptance* is adopted by the Yami Taipower employee group. As one says: 'even if we were not working here, the repository would remain on Orchid Island.' They also focus on what they consider more important issues in the tribe and everyday lives (e.g. children's education, medical improvement and unemployment among young people in the tribe). Moreover, the Yami Taipower employee participants are cynical about the nuclear waste repository and two participants express the impacts of nuclear waste by joking about risks: 'my children grow taller day by day' and 'our offspring grow better than us!' According to Waterton and Wynne (1999: 135), the use of ironic humour to downplay risks to health might reflect a sense of powerlessness or their perceived social status rather than any objective view on safety. Instead of saying that there is no risk, the Yami Taipower employee group appear to accept the fact that they need to live with the nuclear waste repository and try to ignore those particular Yami perspectives that would increase their anxiety about the safety of nuclear waste. Wakefield and Elliott (2000) argue that multiple coping strategies in response to environmental impacts experienced are often used in conjunction within the affected community and are variable over time. The results of Orchid Island case show the

apparent heterogeneous characteristics of local residents' perception on the nuclear waste repository and diverse strategy for coping with its effects on human and nonhuman life.

4. The Taiwanese groups' downplaying of radioactive risk

The way the Taiwanese groups talked about risk of nuclear waste on Orchid Island is quite different from the Yami groups. According to Vaughan and Nordenstam (1991: 29), differences in prior experiences with or exposure to a variety of hazards, and varied beliefs about risk and uncertainty could influence the public judgments of environmental risk. The social experiences of Taiwanese migrants who come from the mainstream society are quite different from those of the Yami tribe. Their relevant experiences with or exposure to the hazardous technology and environment on Taiwan Island, such as toxic wastes facilities, incinerator and nuclear power station, might affect how much weight is given to risks from the local nuclear waste repository. The Taiwanese professional groups have greater perceptions of control over the potential risk of nuclear waste, and indicate that the nuclear waste repository has no significant negative influence on the environment. Scientific evidence has played an important role in their risk judgment. The extract from the Taiwanese professional groups manifest scientific knowledge:

M1 I think the radiation [of nuclear waste] is less than that of televisions. It needs professional evaluation to see whether it has caused serious radioactive influence.

M2 No influence. Radiation exists in the environment. Televisions, computers and microwaves have radiation as well. It is OK if it meets the safety standard.
(The Taiwanese professionals, group 8)

The Taiwanese groups attitudes towards the nuclear waste repository are associated with the question as to whether it is a voluntary or involuntary risk. Research has showed that people are likely to rate the risks of voluntary activities lower than an event perceived as involuntary (Krimsky, 1992: 17). Hence people who have chosen to live in a place where has contested and uncertain risky facilities might downplay environmental risk in order to make sense of their life narratives. In Wynne et al.'s (1993: 46) study of local perceptions of the nuclear industry in West Cumbria, public recognition of the risks involved in living in the area of Sellafield was 'often covered, or mellowed, by layers of rationalization.' In a similar way, those Taiwanese participants who came to Orchid Island voluntarily are likely to be less concerned about radiation risk and put a lot of faith in science because they have to rationalize to themselves and to people they talk to as to the reason they came to such a place if it was so risky.

As previously mentioned, the accident of rusted nuclear waste containers on Orchid Island in the late 1980s would have undermined the Yami confidence in Taipower. However, the event seems to have less impact on the Taiwanese particpants' risk perceptions. In fact, some Taiwanese migrants who have stayed on Orchid Island for only a few months or years might not have experienced this episode, and seem to have paid little attention to this event when it was disclosed. Those Taiwanese participants who have not been living on Orchid Island for a long time or will not stay long are likely to regard chronic and cumulative exposure to nuclear waste as an acceptable level of risk. As one man says: 'it might affect health if people live very close to the repository for a long period of time.' On the other hand, those Taiwanese participants who have lived near a risky facility for a long period of time

might rationalize to themselves that the Taipower employees who work in the repository for decades remain healthy.

Expressions of trust in the regulators and the competence of the company or arguments for the benefits to be gained have been found to be associated with some kind of links to the industry (Simmons and Walker, 1999). A few Taiwanese participants are civil servants and their position in the administration would affect their attitudes towards state-run Taipower. In order to protect one's own or the administration's interests, civil servants are likely to avoid criticism of Taipower's nuclear waste management and providing of public services (e.g. electricity) because they realize that their condemnation of Taipower might get them into trouble.

Moreover, some Taiwanese professional participants are critical of the Yami attributing the Yami cases of cancer to the impact of the repository, and argue that indulgence in wine and the poor quality of the water are the main factors. As one said: 'some people indulge in wine and this causes the increase of the death rate. The water contains high amounts of lime, and algae can be found on the pipes. The quality of water is essentially not good, and it is wrong to attribute health problems to the repository.'

The Taiwanese groups' views tend to correspond to one Yami housewife who argues that pollution or illness should not be only attributed to the nuclear waste repository. She claims that the removal of the nuclear waste repository from Orchid Island could not ensure a healthy environment because the tribesmen's improper deeds would cause other pollution. As she states:

F1   We cannot only blame it on civilization. Civilization also brings us very good conveniences. Therefore, we cannot say that all is because of it [the repository]. Some people just take wine as a meal and even throw away the bottle casually. If it was

broken, then what do we do if someone gets their foot slashed? Since civilized things came, it can be found that people give fish an electric shock and poison fish. How could our environment be unpolluted?

When her negative statements on the tribe are expressed, other housewives in the focus group shake heads and disagree with her points. Other participants try to stop her, but she continues: 'We, the tribe, need self-reflection. As to the problem of crops [poor harvest], we keep cultivating in the traditional way, which is not advanced. We need to learn outside knowledge to let the crop grow well. Also, how could the environment be clean? You see, we do not manage the domestic animals and poultry well. We let them wander. It is just true … In fact, we cannot keep blaming the repository for such numerous problems. It involves the human heart's greediness and laziness. What I saw is just like this.'

These points made by the Yami housewife seem to challenge the Yami indigenous knowledge. While other fisherman and housewife participants believe that poor harvest is caused by radiation contamination, she criticizes the traditional way of agriculture. Letting goats and pigs wander on the street is viewed as a tradition in the tribe, but she is concerned that animal waste could cause problems of hygiene and affect public health. She also argues that local knowledge and practice need to be substituted with expert systems or technological change. The Orchid Island case revealed the antagonism between the Yami indigenous knowledge and scientific knowledge, not only between the Taiwanese and the Yami but also among the tribesmen. Van der Ploeg's (1993) study of the interplay between agrarian science and local potato growers in Andean highlands provides a similar example of conflict between contrasting perspectives. Local methods adopted by the farmers who know the intricacies of their environment (what Van der Ploeg calls 'art de la localité') are very different from the scientists' point of view on potato breeding. He argues that the

rapid spread of the scientific knowledge system tends to cause a marginalization of local knowledge, so that local farmers are excluded as important contributors to knowledge (p. 220). In a similar way to Van der Ploeg's subjects, the other Yami fisherman housewife participants exhibit a defense of the Yami ancient rules in planting taro, millets and breading domestic animals against the relevant critique (e.g. poor harvests, health and hygienic problems).

Some Taiwanese professional participants tend to see the Yami in terms of technophobia or ignorance. As a man states: 'people probably imagine it is very terrible because they do not know about it.' Another woman says, 'they [the Yami] fundamentally reject nuclear waste because they think that civilization brings negative consequences.' Scientific rationality is dominant in the Taiwanese focus groups rather than reference to traditional philosophy and religion, such as Confucianism, Taoism and Buddhism. It is important to note that Taiwan has been influenced by western modernity. The May Fourth new movement (1915-1925), with the slogan 'Mr. Science and Mr. Democracy', criticizing Confucianism and advocating science and technology (with a particular stress on scientific education), has great influence on Chinese intellectuals and educational spheres (Chan, 2002). During the 1970s, nuclear energy was viewed as a solution to the energy crisis and as a symbol of Taiwan's achievement of high-tech development (see Chapter 1). Policy officials and experts often adopted a technical and economic framework to guide policy that provides a picture of nuclear or other high-technology bringing high economic growth. Massive propaganda financed by Taipower and government agencies has had a great influence on public opinion on nuclear power plants (Schafferer, 2001: 101-2).[37]

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[37] Taipower's propaganda efforts include distributing thousands of books and flyers to a variety of social groups, providing educational material full of funny carton characters' appreciation of nuclear energy for primary schools, and giving visitors of the nuclear power plants poker cards and each card has its picture to stress the safety and cleanness of nuclear facilities. The Atomic Energy Council also

Since 1980s, the government has adopted a knowledge-based economy strategy (e.g. semiconductor industry, information and communication technologies, and biotechnology) to promote economic development and strengthen Taiwan's national defence (see Chapter 1). The 'Green Silicon Island' is the ideal policy-blueprint of President Chen Shui-Bian (since 2000) of Taiwan. This national policy encompasses the major visions of environmental sustainability, knowledge-based economy, and just society: 'Green' symbolizes a sustainable environment; 'Silicon' means the knowledge-based economy in which the silicon-based industries is primary (Chen, 1994); and 'Island' implies the uniqueness of Taiwan in globalization. Under national policies, such as Green Silicon Island and innovation-driven growth, scientific rationality becomes one of the new principles of economics. New technology is represented as necessary, safe, clean and environmental-friendly, and as providing a powerful force that could reshape the Taiwanese public understanding of science and environmental problems. Science appears to become inevitable for the solution of environmental problems. As one Taiwanese man puts it, 'it needs new technology to resolve the siting conflict.'

In summary, this section showed that the majority of the Yami groups' perceptions of the impacts of the nuclear waste repository contrast sharply with the Taiwanese groups' view on technology and environmental problems. The Yami fisherman and housewife groups and some Yami professional participants' perception of nuclear waste are closely linked to their traditions and cultural worldviews. The accident involving rusted nuclear waste containers would have undermined the Yami trust in Taipower and the Government. The Yami's blaming of the nuclear waste repository is correlated with the tribal experience of social distance, so that some of the Yami might use the experience of the nuclear waste repository as a way to express

published educational books to convey a message of nuclear safety to children.

a lack of a sense of agency and dissatisfaction with the mainstream society's tremendous impact on their traditional world. However, the Yami Taipower employee group and a few Yami professional participants revealed ambivalence and expressed uncertainty about the nuclear waste repository. An attitude of pragmatic acceptance is adopted by the Yami Taipower employee group for coping with radioactive risk. By contrast, the Taiwanese groups' downplaying of risk is significant. They manifest a scientific rationality that might be influenced by their prior social experiences of various technologies and hazards. The Taiwanese individuals might internalize Taipower's institutional representation of the situation as safe. This internalization can become part of the coping strategies that individuals adopt in response to risks associated with industrial hazards (Simmons, 2003: 90). Also, those who come to Orchid Island for various reasons are likely to downplay environmental risk in order to make sense of their choice and life narratives.

Differing perspectives on disproportionate risk

In this section, I return to the question of how participants looked differently at why Orchid Islanders are exposed to greater risk. Research on environmental justice shows that the poor or minority communities tend to be targeted by government or industries for unwanted noxious sites because of less access to political structures, the lack of resources for taking political action, intentional race discrimination, poverty and so on (see Chapter 2). Irwin (2001: 110) argues for the complexity of local responses to pollution and environmental conflicts; there are likely to be differing and contradictory perspectives even within one locality. The focus groups show that the Yami and Taiwanese groups perceive the reasons why Orchid Island was chosen as the interim nuclear waste storage site differently. The Yami groups' discussions tend

to echo environmental justice discourses, insisting that the tribe suffers disproportionate environmental hazards. They provide explanations for disproportionate risk in terms of bullying of the ethnic minority, lack of democratic process and political resistance. Instead, the Taiwanese migrants provide scientific and economic considerations and utility. The Yami Taipower employee group appears to reflect the position of Taipower in stressing scientific rationality. Table 4.1 below shows the contrasting perspectives between the Yami and Taiwanese groups:

Table 4.1 The Yami and Taiwanese perspectives on disproportionate risk

Focus groups \ Explanations	Yami Fishermen, housewives	Yami Professionals	Yami teenages	Yami Taipower employees	Taiwanese professionals
Bullying the ethnic minority	*	*	*		*
Lack of democratic process	*	*	*		
Scientific rationality				*	*
Utilitarian position					*

1. Bullying the ethnic minority

The siting of the nuclear waste repository on Orchid Island has been linked to the intention to discriminate against certain ethnic groups. The Yami fisherman and housewife groups describe the KMT government and Taipower's dumping of nuclear waste on Orchid Island by analogy with 'throwing unwanted Taiwanese litter'. Likewise, a few Yami professionals regard dumping nuclear waste on their homeland as one kind of discrimination against the minority and a violation of human rights. Their dissatisfaction is expressed by some symbols. As one male professional puts it, 'people should deal with their own rubbish. How can one ask the neighbour to handle it?' The Yami teenage student groups tend to regard dumping nuclear waste on Orchid Island as 'the behavior of bullying.' A few Yami students criticize the authority for

self-interest because the Yami feel the officials do not want nuclear waste next to their home, and regard it easy to bully the tribe. The following passages from the Yami fisherman and housewife group, and professional group reflects that the siting of nuclear waste facilities has led to the Yami's feeling of lack of respect (see Chapter 5):

Mod   Why is it that nuclear waste has been stored on Orchid Island?

M1   The ethnic minority is seen as deceivable. We accepted the Japanese education in the past. We could not understand Mandarin at that time.

M2   People did not know what nuclear waste is because education on Orchid Island was not sufficient at that time. We realized that the stuff there was nuclear waste after we went to Taiwan [Island] to study in the high school.

F1   The authority probably looked down on our Orchid Island, and considered that we know nothing. Therefore, they threw nuclear waste at Orchid Island.

(The Yami fishermen and housewives, group 2)

M1   In fact, this is the deed that would let the tribe be wiped out, which does not respect us. The authority did not think about human rights, culture, life and the environment.

(The Yami professionals, group 4)

A few Taiwanese professional participants tend to feel that the decision involves a little bit of bullying and failure in communication with the Yami. The passage below from the Taiwanese professional groups reflects that their stance seems close to the view of the Yami, but the way they talk is circumlocutory:

F1   Because the residents are seen as ignorant.

M1   More or less ... it involves bullying. It seems that the Yami considered that they were constructing a military habor.

(The Taiwanese professionals, group 8)

M1   There are fewer people here, and the minority group might be a factor as well.

M2   They [the Yami] are aborigines. It would be easier to deal with the problem because they do not quite understand how serious nuclear waste is.

(The Taiwanese professionals, group 9)

2. Lack of democratic process

The Yami's perceived problem of bullying has close connection with their exclusion from the decision-making processes. The Yami fisherman and housewife groups, professional groups, and teenage student groups express their dissatisfaction that the Yami were deceived into believing that it was a fish cannery instead of a nuclear waste repository which was being constructed on the island. The KMT government is accused of cheating, as one professional states: 'they [the government officials] said that the site would bring prosperity and job opportunity, and Orchid Islanders would be happy about this. … It was just a deceit.' A Yami teenage student says: 'They lied to us that they were constructing fishing cannery, which is an excuse.'

Furthermore, the Yami groups stress that the decision to dump nuclear waste on Orchid Island has not got islanders' consent and lacks local participation. The Yami recognize that the tribesmen and the Head of the Island Administration were not well-educated or literate. The Yami fishermen and housewives, and teenage student group points out that the tribe did not oppose the scheme because they did not know the truth at that time. As a housewife puts it: 'We did not object to it because we knew nothing about it. If we were told that it was a nuclear waste repository when it was being constructed, we absolutely would not have let them [Taipower] do it.'

The decision to dump nuclear waste on Orchid Island was made in the late 1970s during the period of authoritarian governance. The information system was closed and political rights of the public were limited at that time. It is uncertain whether government officials did lie to certain Yami villagers that the repository was a fish cannery and that the harbor constructed for the shipment of nuclear waste was for military purposes, in order to made it smoothly to ship nuclear waste. Or it might have happened that the authoritative government failed to keep the Yami informed, which

led to the Yami's guess that it was a cannery because the barrels which holds nuclear waste are like cans. However, the story of cheating and deception seems to have been retold among the Yami tribe, deepening their mistrust of the government. As on fisherman puts it: 'the KMT government deceived us. They said that they were going to build a cannery, and we did not think of the result. So we could not trust our government.'

3. Scientific rationality

According to the Taipower, the siting of the nuclear waste repository is driven by technical criteria, with the consideration of the geological characteristics of Orchid Island. There is an ocean trench near Orchid Island and it was considered doable and convenient to throw nuclear waste into the ocean trench for permanent nuclear waste disposal in 1970s. However, the plan was subsequently abandoned as the London Dumping Convention prohibited the dumping of nuclear waste at sea.[38] In contrast to the other Yami groups, the Yami Taipower employee groups tended to avoid expressing themselves in the beginning. As a man says: 'I was only two years old when the repository was being constructed, and have never thought of the reason why nuclear waste is here.' Another girl puts it, 'In fact, we, Orchid Islanders had no idea of this. We heard from the outsiders.' As members of Taipower, the Yami employee participants tend to represent the position of Taipower. On the other hand, they appear to regard the nuclear waste disputes as an episode with various versions and retold rumors to deal with the inconsistency between the Yami tribesmen and Taipower:

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[38] The London Dumping Convention, established in 1972, is officially the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Materials, which is not binding on non-concurring parties (Blowers, 1996: 178).

F1   It is said that there is sea trench near here [Orchid Island] and it is convenient to throw [nuclear waste] into the sea. The result is that after shipments here, the national convention says it is not permitted. I did not know this before, I ask other [Taiwanese] people here because visitors have asked this question, and I was told about this.

F2   They said they were going to construct a factory [cannery]. I do not know.

M1   Then the cans became bigger!

(General laugher)

F2   Consequently, they deceived us.

F1   Everybody is like this, hear, hear and hear.

M2   Too many legends.

F1   You need to judge for yourself. It depends on whom you would trust. Sometimes you listen to others' talking, and you would feel what they say seems to make sense. But there is lots of contradiction.

F2   Too many versions.

      (The Yami Taipower employees, group 7)

Scientific knowledge has been crucial in the Taiwanese professional participants' judgment about the decision of dumping nuclear waste on Orchid Island. Their reliance on the surveillance of experts is significant, as one Taiwanese professional puts it: 'We have got experts to handle the nuclear waste repository, thus it would not be far away from what is normal.'

4. Utilitarian position

Those Taiwanese professional participants who provide the explanation for the siting of the nuclear waste facility on Orchid Island in terms of scientific rationality tend to take the utilitarian view that siting the nuclear waste repository at a remote place with low population density and a suitable geographic environment could minimize the possible risk (see Chapter 6). The Taiwanese groups tend to regard people on Taiwan Island and Orchid Island as a whole, regarding the Yami and the Taiwanese as the same community. The repository on Orchid Island is seen as

acceptable for the majority of the Taiwanese participants. As one woman puts it: 'Orchid Island has the more suitable geographical environment. It could minimize the potential pollution. We are a society of people sharing a sense of common identity, and it will not involve bullying the minority.' Another man echoes: 'It should be acceptable if it meets the safety standards.'

Freudenburg and Pastor (1992) argue that three main viewpoints on public responses to technological risks can be discerned: the public as ignorant (irrational), selfish, and prudent. Those who adopt the framework of public selfishness generally acknowledge that locally undesirable facilities may be necessary to society as a whole, and local opposition is seen as self-interested (p. 43). It is worthy of notice that one Taiwanese professional group recognizes the NIMBY (Not In My Back Yard) phenomenon in the Taiwanese context and tends to liken the Yami's position to other residents' protest against incinerators and other hazardous facilities. As one puts it: 'the problem is that nobody wants the nuclear waste repository to be built in their neighborhood or at the front door.' Another participant echoes, 'it is hard to make a decision. No one wants it to be in their backyard.' What concerns the Taiwanese professional participants is that the Yami's continuous protest against the nuclear waste repository has caused a lot of social costs and it would cause any decisions to be suspended if local residents regard NIMBY style protest as a good way to influence government policy without interactive communication.

According to the existing literature, the main view on NIMBYism is critical, referring to emotional, irrational or selfish local opposition to siting proposals, as Sjoberg and Drottz-Sjoberg (2001) put it: 'a will to let others suffer from a risk and oneself benefitting' (p. 83). People who could be regarded as NIMBYs are supposed to support or benefit from a technology or facility, like nuclear power plant, while

saying no to bearing the associated risk costs (p. 76). However, the Yami do not see nuclear energy as necessary, thus those Yami who are against the nuclear waste could not be described as driven by NIMBY motives. Electricity supply for Orchid Islander mainly comes from one fossil fuel power station on the island. According to the interview with the head of the Taipower's fossil fuel power station on Orchid Island, the Yami seems to realize that the fossil fuel power station plays an important role in tribal life. As he puts it: 'compared to the [nuclear waste] repository, the local community respects the employees of the fossil fuel power station because electricity is a life necessity. Their opposition focuses on the repository, not the fossil fuel power station.' I will provide further discussion on the positive views on NIMBY conflicts in Chapter 7.

The framing of risk issues and the siting conflicts

Differences in how risk problems are conceptualized and framed might foster subsequent dissension and conflicts between the experts and the public, and within the lay population (Heimer, 1988; Vaughan and Seifert, 1992; Bradbury, 1989). Vaughan and Seifert (1992: 123) argue that prior beliefs and values system could manifest their influence through the framing or conceptualizing questions of health and environmental risk problems. This section examines framing differences between the Yami and Taiwanese groups that affect their views on the issues of where should nuclear waste go. The disputes over the nuclear waste repository have been framed as an ethical issue, a scientific problem, and a consideration of whether the decision could get public acceptability and bring economic benefits. The Yami and Taiwanese groups suggest a variety of places as the best option for nuclear waste storage, and each suggestion has its own reasoning.

1. Nuclear waste risk as an ethical issue

Nuclear waste disputes have been framed as an ethical issue in the majority of the Yami focus groups. Participants are asked about their views on where to locate nuclear waste and the reasons why they think it would be a solution. It seems to be the general agreement for the Yami groups that nuclear waste should be stored on an island without inhabitants because of the perceived health and environmental risks. It has been framed as a human rights issue in one Yami focus group that dumping nuclear waste on the unpeopled island could avoid doing serious harm to people (see Chapter 6). However, the Yami express their discontent with Taipower's choosing Little Orchid Isle (an unpeopled isle) as one of the possible options for the permanent nuclear waste storage site (see Chapter 1). It is considered that the isle is too tiny to store nuclear waste and is too near the residents of Orchid Island for some of the Taiwanese participants, while the Yami groups tend to regard it as an issue of respect (see Chapter 5). As one Yami housewife puts it: 'They [Taipower and government] should respect us, every lives on Orchid Island. As to the site, the new government [the DPP government] will know where to store.' One Yami teenage student uses a proverb: 'Do not do to others what you don't want to be done to you [dumping nuclear waste on one's homeland].'

Some Yami groups frame the siting problem of nuclear waste facilities as a question about who should take responsibility for the nuclear burden. Many of the Yami emphasize that it should be Taipower and the Government, who produce nuclear waste and dump it on Orchid Island, that should take responsibility and bear costs. As one Yami fisherman states: 'Taipower produces the pollution and they need to bear.' One Yami teenage student puts it: 'No matter where nuclear waste should go, it should be the government officials instead of the Yami who take responsibility for

it.' Instead, the Taiwanese groups stress shared responsibility for nuclear waste management (see Chapter 6). As discussed in the previous section, the Yami groups regard dumping nuclear waste on Orchid Island as analogous to the conduct of throwing litter on a neighbour's property and asking the neighbours to deal with it rather than putting it in the bins by oneself. The Yami fisherman and housewife group, and the professional group stress that each household should handle their own garbage, and argue for the need to remove nuclear waste from Orchid Island to the producers:

M1   If the places without residents could not be found, we also hope to remove to nuclear power plant No.1, No.2 and No. 3 because this stuff [nuclear waste] comes from there. (The Yami fishermen and housewives, group 1)

M1   Nuclear waste should be put in the place where it was produced. This [nuclear waste] is not what we produce. It should not be our problem. (The Yami professionals, group 3)

F1   Taipower said that they could not find a site, which is just an excuse. The areas around nuclear power plant No.1, No.2 and No.3 can be expanded for storage.
M1   It should be sent back Taiwan [island]. No matter what... it should be shipped back Taiwan [island]. (The Yami professional, group 4)

Similarly, a few Taiwanese participants also use the responsibility language that those who get involve in nuclear waste producing need to be responsible for the burdens. One Taiwanese participant suggests shipping it back to the USA, since the reactor and generators of nuclear power plants are supplied by American companies (General Electric and Westinghouse), and it involves technology transfer between the two countries.

Since the Yami tend to regard nuclear waste as the problem of Taipower and the Government, some of them argue for the need to remove it from Orchid Island and

suggest a variety of places for nuclear waste storage, such as Wuchiu proposed by Taipower (see chapter 1) and other remote islands and areas. The extract below from one Yami teenage student groups reflect that they stress the uniqueness of Orchid Island and are more or less playing with their opinions:

M1   Did they [Taipower] say they would remove the nuclear waste to a small isle?

M2   Wuchiu. Haven't Taipower given every household three millions [NT dollars] to get them to accept it?

M1   Dump nuclear waste on Hualian [County].[39]

M2   Why don't they construct a repository on Penghu?[40]

M3   Yes. There are so many isles of Penghun.

M4   Do those isles have a unique culture?

M2   How could it compare to ours? Our island has so many conservation animals, and Orchid Island's abundant culture. Also Orchid Island's sub-underground houses have become world heritage.

M3   Are there many residents on Green Island?[41] Why not construct the repository on Green Island?

M5   Change the site to other places once every ten years.

F1   To outer space.
        (The Yami teenage students, group 5)

2. Scientific frame

The issue of where to locate nuclear waste has been framed as a scientific or technical problem. Some Taiwanese participants perceive the disputes in terms of scientific rationality and rely on experts in making decision. As one Taiwanese professional puts it: 'No matter where the nuclear waste repository is on Orchid Island or other places in Taiwan, it has been done cautiously. It is impossible that government would disregard the safety rules.' One Yami professional indicates: 'We

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[39] Hualian County locates in the east part of Taiwan.
[40] Penghun is the biggest island of Taiwan, situated in the Taiwan Strait.
[41] Green Island is a tourist spot situated off the southeast coast of Taiwan. Some infamous prisoners are

may not have clear ideas of where the site should be, since this is a more professional question.'

Those Taiwanese participants who regard the nuclear waste repository as safe tend to indicate that removal is unnecessary. This extract shows their criticism of those Yami who are seen to exaggerate the threat of nuclear waste:

F1   It truly has not caused a very serious pollution event. Because certain people use some strategies to let people relate nuclear waste to the atomic bomb. Villagers should be told the right information, but they do not believe it.
(The Taiwanese professionals, group 8)

M1   It also has a nice side, however, those who take the lead [in the campaign] are determined to get it [nuclear waste] out, in fact, some residents are not like them [the campaigners]. Well, deformed children have never been found here.
(The Taiwanese professionals, group 9)

A few Taiwanese professional participants claim that the remote areas of Russia and the desert far away from populations in Mainland China (e.g. the place for testing missiles) would be suitable sites for nuclear waste storage. They stress that Taipower and experts' surveillance could prevent pollution and regard the overseas repository proposal as a solution for the domestic dilemma of nuclear waste management.

3. The consideration of public acceptability and economic benefits

The issue of siting the nuclear waste facilities has been framed as a consideration of whether it could get public acceptability and benefit the local economy. The Taiwanese groups emphasize that compensation offered by Taipower has great help to local economy and welfare, and express their concerns about public acceptability and the difficulty in the removal of the nuclear waste repository. The extract below from

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sent to the jail on the island.

the Yami and Taiwanese professional groups reflects the crucial role of compensation for the island:

M1   It is not just about removal... if the repository was not here, no compensation, and young people would fear to return to the traditional life.
(The Yami professionals, group 4)

M1   I think it is not necessary to remove it. The Yami really need compensation because of their economic condition. Otherwise they will lack the funding for education resources and the welfare of those lonely elders.
(The Taiwanese professionals, group 8)

M1   The benefit that the repository brings outweighs its harm. National health insurance and electricity are free for local people, but Taiwanese people here need to pay.
M2   On the grounds of helping the Yami, it would be better not to remove it. Today the most important is about economy and construction, and they [the tribe] should make good use of the compensation.
(The Taiwanese professionals, group 9)

Another Taiwanese participant is critical of the Yami's stance of objection to nuclear waste because he regards it as contradictory that the Yami accept the compensation and try to get nuclear waste out at the same time. Other Taiwanese participants are concerned about the Yami's over-dependence upon the compensation. As one puts it, 'The Yami are dependent on the grants offered by government, including the aspects of food, clothes, housing and transportation. If government takes care of the tribe too much, they cannot be independent.'

Public acceptability is also one of the primary concerns for the Taiwanese groups. They tend to regard the Yami's argument for shipping back nuclear waste to Taiwan's nuclear power plants as unfeasible. The extract below shows how they thought it would be difficult to remove:

F1   It is absolutely hard to remove. There seems to be no other ways. What can be done is to compensate.

M1   It will bring more problems if the repository is removed to other places. People [Orchid Islanders] might get used to it now. It takes more time to appease other local residents [in a new site] otherwise they will protest. It is really difficult to ship back to Taiwan Island.

(The Taiwanese professionals, group 8)

The Yami Taipower employee group mentions that Taipower has made efforts to negotiate with North Korea, Russia and Mainland China for an overseas nuclear waste disposal ground, but recognize the complexity in international politics and neighbouring countries' resistance to the idea of transporting nuclear waste. Considering public acceptability, a few Yami teenage student and professional participants, and Taiwanese professional groups, claim that it would be better to put nuclear waste on the community that has the intention of hosting the repository. It implies that decisions need to be made on the basis of consulting the public or local community, and letting the residents judge the relative risks, costs and benefits for themselves (see Chapter 5 and 7).

In summary, there were clear differences in the framing of risk issues between the Yami and Taiwanese groups. Questions about how to manage nuclear waste risks seem to be framed in scientific, economic and political terms for the Taiwanese groups, while the Yami groups tend to adopt an ethical frame, including rights, respect, and fairness regarding the distribution of radiation risks. The competing framings would contribute to increasing friction in society and the difficulty of dialogue (see Chapter 5 and 7).

The disputes over compensation

The compensation offered by Taipower for Orchid Island is very controversial. The underlying disagreement seems to be different understandings of what the compensation means and what kinds of transaction is taking place between the Orchid Island residents and Taipower or the Government. Is it voluntary or involuntary? Can the compensation restore the Yami perceived loss? In Aristotle's *Nicomachean Ethics* (1985), justice in rectification is concerned with proper compensation. It involves two kinds of transactions. One is voluntary transactions, such as buying, selling, renting and loaning. The basic standard here is reciprocity. The other is involuntary transactions, including those that are done in secret like theft and poisoning, and those that are done by force like assault, murder and kidnapping. The basic requirement here is to compensate victims.

According to Hunold and Young (1998: 86), a risk accepted with adequate information and voluntarily is more ethically legitimate than the imposed risks on local residents. Like many in the environmental justice movement, Hunold and Young (1998) argue that accepting a risk in return for significant payment or compensation can not count as voluntary if those who accept the sites desperately need the money or jobs and have no other options for alleviating their disadvantage. Cowell (2000: 690) defines environmental compensation as 'the provision of positive environmental measures to correct, balance or otherwise atone for the loss of environmental resources.' It involves the problem that environmental goods might be seen as unpriced, and people refuse to accept money or measures for their perceived loss. This section explores how the Yami and Taiwanese groups view the compensation offered by Taipower, possible better ways of using the compensation, and the implications for existing discourse on the conception of compensation.

1. Diverse perspectives of the compensation

As mentioned in Chapter 1, the compensation offered by Taipower was spent broadly on Orchid Island's infrastructure and social welfare, and has been an important support for local financial difficulty. Every year Taipower provides compensation (or call land rent for the repository site) for the Island Administration, and the compensation committee is responsible for the use of the compensation, which consists of those from the Island Administration, the Island Representatives, the Head of each village, a few villagers from each village. However, my research shows that some Yami groups are resistant to monetary evaluation or putting a price on unpriced environmental goods (cf. O'Neill, 1997b). The Yami fisherman and housewife, and professional groups tend to regard the nuclear waste repository as an imposed and coercive risk, and count their accepting the payment for the loss as involuntary.

An initial point to notice is that some Yami fishermen, housewives and professional participants indicate that they would like to remove the nuclear waste repository from Orchid Island rather than get huge amounts of compensation because money cannot restore the environment. The Yami fisherman and housewife groups tend to regard the compensation as something used by Taipower to give the tribe relief, and something which the Yami deserve because of the perceived negative impact of the nuclear waste repository. The following extract from the Yami professional groups reflect their concern about the life of the present and future generations that cannot be measured along a single money metric:

Mod What does the compensation offered by Taipower mean to you?

F1   Just to comfort us. Money is important, but life is more important. If I get a sum of money to exchange for my life, for what? We do not so need the money [compensation]. Originally, we lived alone on this poor Orchid Island, but we were very happy.

F2   For me, since Taipower has dumped nuclear waste here, we deserve to have compensation.

F3   Actually, I do not cherish the compensation as a rarity. I only want the clean land of Orchid Island.

F1   We should not keep saying 'money, money, and money' and let nuclear waste be here'. No! Think about our offspring, they need to exist.

(The Yami professionals, group 3)

The compensation has been linked to one kind of discrimination and is seen as a tool to get the economic disadvantaged to accept nuclear waste. As one male Yami professional states: 'I think the compensation represents one kind of humiliation. I put this dirty thing at your home and then I give you some sweets. It is not different to ethnic discrimination.' Instead of using the phrase of compensation, one Yami professional group regards compensation as *bu chang* (indemnity), which implied that nuclear waste has caused actual damage to the Yami. The extract below shows that the idea of compensation held by one Yami professional group is consistent with Aristotle's idea of involuntary transactions:

M1   I oppose the wording of compensation and it should be called *bu chang* [indemnity]. Nuclear waste repository initially did not get consent, and we rejected it unanimously.

M2   Yes. They originally did not get the consent of villagers to dump nuclear waste here. We shouldn't take it [compensation].

(The Yami professionals, group 4)

The Yami teenage student groups hold a negative position regarding the compensation, and connect it with 'buying', 'Taipower's concealment', and 'trying to get the Yami to accept nuclear waste repository'. They express their worry about the negotiation between Taipower and the Yami elder or representatives that might involve bargaining or bribery. The perceived voluntary transactions between Taipower and a few Yami elders can only let certain individuals get advantages. As one Yami

boy states: 'The elder Yami will not object to nuclear waste as long as they could get money.' Another girl echoes: 'I feel the elders would not consider future generations. There are some adults who do nothing but think of allocating the money.' The Yami teenage student groups stress that the benefits the tribe could gain cannot outweigh the risks of the repository, and express their concerns about the Yami's over-dependence upon the compensation:

M1   Although the compensation is very attractive to us, nuclear waste is harmful. Life is
       most important of all. We still can live even without that money. The compensation
       would make us, Orchid Islanders, have money not by labor.
       (The Yami teenage students, group 5)

F1   I feel that the Yami have become more money-loving. People's notions has changed
       and become lazy because of the compensation.
       (The Yami teenage students, group 6)

By contrast, the Taiwanese professional groups regard the compensation as reasonable and beneficial for the Yami tribe and local community. For some of the Taiwanese participants, the Yami's acceptance of the compensation implied their consent to the nuclear waste repository. Thus, the Yami's continuing protest against nuclear waste repository is treated with skepticism by some of the Taiwanese participants. There is considerable cynicism expressed about the Yami's dependency on the compensation in the Taiwanese professional groups:

Mod What do you think about the compensation offered by Taipower?
M1   It is contradictory… removal and compensation. For example, the electricity is free for
       the Yami, and so are tuition fees and national health insurance. In fact, nuclear waste is
       not so dangerous. Taipower has always tried to please the Yami.
       (The Taiwanese professionals, group 8)

M1   The welfare of other indigenous peoples in Taiwan is not as good as the Yami here. The nuclear waste repository has been here for so many years, why not get along with it well? I don't know whether the Yami residents know that the free electricity is because of the repository, or take it for granted. Spoiled?

F1   Their protest seems to imply that they demand more compensation.

(The Taiwanese professionals, group 9)

The Yami Taipower employee group attempts to avoid any criticism of the role of Taipower due to their working for Taipower. They express their concerns about how to have effective use of the compensation. As one Yami participant puts it: 'It seems that the Island Administration does not use the compensation very well, which makes us feel that we did not really have the compensation.'

To sum up, the discussions above showed the competing views and positions regarding the compensation held by the Yami and Taiwanese groups. The Yami fisherman, housewife and professional participants' perspectives on the compensation offered by Taipower is similar to what Aristotle calls involuntary transactions. However, they do not think that justice has been done when Taipower compensates the tribe because the environment or the Yami health is regarded as uncompensable. The Orchid Island case highlighted the problem of economic valuation of environmental damages or a single standard of value in ecological conflicts. As Martinez-Alier (2003: 222) argues, 'ecological distribution conflicts are sometimes expressed as discrepancies of valuation inside one single standard of value (as when there is a disputed claim for monetary compensation for an environmental liability), but they often lead to multi-criteria disputes (or dialogues) which rest on different standards of valuation.' This is the reason why some of the Yami continues to protest against the nuclear waste repository and express the need for recognition (see Chapter 5 and 6). Instead, the Taiwanese groups tend to regard the Yami's acceptance of the

compensation (also know as land rent for the repository) offered by Taipower in terms of reciprocity or voluntary transactions.

However, it is difficult to resolve the problem of competing ideas of the compensation between the Yami and Taiwanese groups. Rawles (2002) argues that compensation for the community hosting a radioactive waste facility should be proportionate to negative impacts. Negative impacts of hosting a facility could contain 'actual harms, risk of harms and fear of harms, to a range of good or values, including human health and well-being; the environment; the community; the landscape; the quality / character of place; reputation and self-esteem' (p. v). Instead of the attempt to offer complete answers to these conflicts, I argue for the need to recognize plural values and positions, especially the Yami's voices (see Chapter 5 about recognition and Chapter 7).

2. Possible better ways to manage the compensation

Most of the participants express their dissatisfaction with the effectiveness of the Island administration's management of the huge amount of compensation and suggest possible ways to manage the compensation, although the Yami and Taiwanese groups understand the compensation differently. Instead of arguing for removing nuclear waste or not, a few Yami professionals suggest that the current primary task is to manage the compensation effectively. Some advocate that the compensation should be allocate to each villager to give one the opportunity to make good use of the compensation to support livelihood, while others argue that compensation needs to be spent on public affairs that could be beneficial to the whole community. One Yami professional indicates a divide between generations: young people tend to regard it better to set up a foundation to manage the sum of money, while those aged above

forty and have children advocate distributing the money to the Yami individually.

The Yami fisherman and housewife groups, and some Yami professional participants, claim that they do not know how much annual compensation the local community has got and how the compensation has been used. They argue that some compensation has been used on unnecessary local infrastructures and to benefit construction contractors rather than those Yami who are in need of financial help. The Yami fisherman and housewife groups express their concerns about the elderly Yami and argue that the compensation should be used to support elderly Yami who get ill and cannot live on fishing or agriculture. For some Yami fisherman, housewife and professional participants, the compensation does not function well in improving the Yami life. Owing to their distrust in the compensation committee and worry about mismanagement, the majority of Yami fisherman and housewife participants and some Yami professionals argue that the compensation should be allocated to the individual.

Instead, the younger generation tends to take the view that the compensation should be spent on the whole community. A few Yami professional participants stress the need to use compensation on cultural conservation and to cultivate the young Yami. As one Yami professional says, 'It should be used on stimulating production and developing the culture of the island. For example, it could help peope make a canoe. Otherwise the Yami would become too dependent. The tribal autonomous parliament needs talents for governance' (see Chapter 5).

The Yami teenage student groups unanimously claim that the compensation should be used on public affairs, including education, student aid, transportation, medical service, infrastructure, the problem of litter and discarded cars. In fact, the students have benefited a lot from the compensation, such as tuition fees, scholarship,

school facilities and lunches. They oppose the idea of allocating the compensation to the individual because it would be their parents rather than the students who get the payment. The extract below reflects the perceived gulf between the elder and young generations:

F1   Spend it on education.

F2   Grants for stationery.

F1   Providing scholarships to those who would go to college. In fact, Taipower have done this. But only those who are outstanding or very poor can get it.

F3   For handling the trash.

F1   But old people are stubborn.

M1   They think their decision is always right.

(The Yami teenage students, group 5)

The Yami Taipower employee group argues that parts of the compensation should be used on public affairs of the island and other parts of the compensation could be allocated to the individual villager for their particular needs. They propose to spend the compensation on solving the current problems of Orchid Island, including the aspects of environment, education, poor medical quality, the high costs of building houses, cultivating talents and letting villagers know more about nuclear waste.

Similarly, the Taiwanese professional groups take the utilitarian view that spending the compensation on public facilities, social welfare and education could bring greatest benefits for the community, and would be good for future generations as well. They recognize that it can involve construction scandals or bribery when the compensation is used on infrastructure, but it does not mean we need to adopt the elder Yami's idea of allocating the payment to individuals because they might waste on unnecessary consumption.

In summary, this section has showed the multiple ideas of compensation held by the Yami and Taiwanese groups. The Yami groups tend to stress that life is unpriced and the compensation cannot redress coercive radioactive risks. Instead the Taiwanese groups tend to focus on the benefits that the nuclear waste repository can bring to the tribe and local community, and connect the Yami's taking of the compensation with their acceptance of the nuclear waste repository. Despite the competing ideas of the compensation between the Yami and Taiwanese groups, some young Yami professional, the Yami teenage student groups and the Taiwanese professionals take the same view that the compensation should be used on the community rather than the allocation to the individual.

Conclusion

This chapter highlights the main differences in risk perception between the Yami and Taiwanese migrants on the context of Orchid Island, and the social and cultural factors that influence the Yami and Taiwanese perceptions of radioactive risk. The Yami fisherman and housewife group see nuclear waste as analogous to the 'evil ghosts' in their tradition, and is blamed for bringing misfortune and overarching negative life experience. The Yami perspective on disproportionate radioactive risk suffered by the tribe in terms of bullying of the ethnic minority and lack of democratic procedures is closely linked to the tribal past experiences of authority and Taipower during the authoritarian period. By contrast, the Taiwanese groups tend to take a utilitarian view and frame nuclear waste issues in terms of scientific rationality. For many of the Taiwanese participants, the Yami's invariable objection to the nuclear waste repository is shaped by the exclusionary attitude toward anything foreign or outsiders and tribal resistance to the dominant Taiwanese society.

The disputes over the nuclear waste repository on Orchid Island reflect not just the Yami's fear of risk, but also the complexity of political and social relationships. The competing perspective on disproportionate radioactive risk and the framing of risk issues lead to different views on the siting of nuclear waste facilities and the symbolic meaning of compensation. Nuclear waste was symbolically linked to household litter in the Yami fisherman and housewife groups, who argue that Taipower needs to deal with its own litter (nuclear waste) rather than put it in the house of their neighbours (the Yami). Ethical concerns such as respect, responsibility and human rights provide a basis for the Yami's resistance to the nuclear waste repository and the defense of the tribe. However, technical and economic considerations and public acceptance seem to be the primary concerns for the Taiwanese groups. Furthermore, the Yami fisherman, housewife and professional participants tend to regard the compensation offered by Taipower in terms of involuntary transaction, and the environment or the Yami health is regarded as uncompensable. The Taiwanese groups tend to see the Yami's acceptable of the compensation in terms of reciprocity or voluntary transations. But there is considerable division not only between the Yami and Taiwanese groups but also among the Yami. The Yami Taipower employee groups show ambivalence about the conflicting position of their Taipower colleagues and other tribesmen, and raise the question about which of the multiple sources of information are to be trusted. Compensation is also regarded differently in the Yami focus groups, with the elder and young Yami holding different views on the best way to use the compensation. The Yami teenage groups also suggested that it might involve a bribery scandal between the Yami elders and Taipower.

Chapter 5 Democratic procedures, recognition and just distribution

The discussion of environmental justice discourses in chapter 2 showed that issues of inequitable distribution, misrecognition and a decline in participation are often interwoven in political and social processes. The Yami fisherman and housewife groups and some Yami professional participants regarded the disproportionate radiation risk suffered by the tribe in terms of the bullying of ethnic minorities and lack of democratic procedures, linking it to issues of recognition (see Chapter 4). This chapter discusses the interplay among issues of democratic procedures, recognition and just distribution surrounding the disputes over the nuclear waste repository on Orchid Island, including the exploration of the problem of the procedural dimension of environmental justice, and the interface between the recognition of difference and just distribution.

The first section begins with the reviews of deliberative democratic theory that has been viewed as a response to the deficits of contemporary liberal representative institutions (D'Entrèves, 2002: 24). As D'Entrèves (2002: 39) argues, 'the validity of a concept of justice and the legitimacy of political institutions and public policies based upon it can be best defended on the basis of a normative theory of public deliberation.' It examines the Yami and Taiwanese groups' opinions on who should make the decision and the role of the public. The second section discusses the question as to whether deliberative democracy is biased against disadvantaged groups. According to Miller (2002), the model of deliberative democracy has faced three lines of criticism, including the criticism from realists (e.g. Sartori, 1987), social choice theories (e.g. Arrow, 1963), and difference democrats. I focus on the third line of

criticism made by difference democrats or feminist suspicions toward deliberative democracy in cultural context, like Young (1996, 2000) and Sanders (1997), which claims that deliberative democracy tends to be biased against disadvantaged groups such as the poor, ethnic minorities and women. The critiques challenge deliberative democracy's credentials as a method of reaching collective decisions in a pluralistic society that are more just than those reached in existing liberal democracies. I put Young's critiques of deliberative democracy to the test.

The Yami groups' framing of radiation risks and siting issues in terms of respect manifests the importance of issues of recognition (see Chapter 4). Some Yami's strong opposition to Taipower and the nuclear waste repository has accelerated the Yami elites' demand for recognition of cultural status. The final section discusses the problem of misrecognition, disputes over the tribal name and landscape renaming, and the implications of the Yami's pursuit of aboriginal autonomy for the conceptions of environmental justice.

Who should make the decision?

Deliberative democracy, as Gutmann and Thompson claim, 'is the most appropriate way for citizens collectively to resolve their moral disagreements not only about policies, but also about the process by which policies should be adopted' (1996: 5). Hence, the legitimacy of any given policy comes from the deliberative process by which that policy was chosen, rather than by recourse to foundational knowledge of what is just. According to Miller (2002), the model of deliberative democratic promises to meet at least three conditions: 'it is *inclusive*, in the sense that each member of the political community in question takes part in decision making on an equal basis; it is *rational*, in the sense that the decisions reached are determined by the

reasons offered in the course of deliberation, and / or the procedures used to resolve disagreement in the event that no consensus can be found; and it is *legitimate*, in the sense that every participant can understand how and why the outcome was reached even if he or she was not personally convinced by the arguments' (p. 201). Each of these claims can be used as a criterion to evaluate current democratic arrangements.

Young (2000: 17) makes similar arguments that the model of deliberative democracy serves as the means of validating the most just policies under ideal conditions of inclusion, political equality and public reasonableness. She argues that the model of deliberative democracy implies a strong meaning of inclusion and political equality, and tends to promote justice because 'people aim to persuade one another of the justice and wisdom of their claims, and are open to having their own opinions and understandings of their interests change in the process.' For Young, inclusion means that all those affected should be included in the process of discussion and decision-making, where 'affected' means that 'decisions and policies significantly condition a person's options for action', rather than only trivially affect them. As a normative ideal, she thinks that inclusion should embody norms of political equality, which allows for maximum expression of opinions and perspectives concerning the problems that the public needs to solve (p. 23).

The idea of inclusiveness raises the problem of scale: it is questionable to engage large numbers of people affected by decisions in a deliberative process (Dryzek, 2001; Goodin, 2000; Parkinson, 2003). Differing ways to define those who are affected by nuclear waste and select people as representative of members of specific affected social groups would lead to different policy outcomes. Should the siting decision or the removal nuclear waste from Orchid Island be made by the Yami, by the populations on Orchid Island, by the local or central government, by the residents of

potential permanent repository site, or at the level of the 23 million people in Taiwan? The focus group participants are asked about their viewpoints on the question as to who should make decision about the disputes over nuclear waste management. I now provide the differing perspectives and arguments made by the Yami and Taiwanese groups.

1. The majority of the Yami groups: the tribe should make the decision

Most of the Yami participants tend to claim that the tribe should make the decision collectively. The Yami's idea of making decision collectively relates to their experiences of dealing with tribal matters, in which general affairs are decided by joint discussion in the Yami society. Some of the Yami participants feel that the tribe and their homeland have been severely affected by the nuclear waste repository (see Chapter 4), thus the decision should be made based on their will to remove nuclear waste from Orchid Island. As one Yami professional puts it: 'The Tao [Yami] tribe should make the decision. One person should not make the decision.' Another participant echoes: 'Our stance is consistent. From our protest, it can be found that we unanimously ask to remove the nuclear waste soon.' It seems that some of the Yami professional participants attempt to represent their opposition to nuclear waste as tribal consensus.

Likewise, the Yami teenage groups also emphasize that the Yami should make the decision collectively and that the opinion of everyone matters equally. They regard voting as the best way to express their preference and to make decisions. It seems that for the Yami teenage participants, the idea of *everyone's opinion* only refers to the Yami on Orchid Island, and does not include Taiwanese migrants on the island and the Taiwanese public. The Yami teenage students seem to take the position that the

Taiwanese public do not need to be included in the process, otherwise it might happen that majority of people in Taiwan regard Orchid Island as a suitable place for permanent nuclear waste storage. What the Yami teenage group wants tends to be the right to veto the government's policy of dumping nuclear waste on the island, as the extract below shows:

M1 To make the decision by everybody's [the Yami] opinion. To remove nuclear waste.
M2 Yes, voting, to integrate everybody's opinion.
M3 For example, those who agree raise their hand.
M2 Voting is the best way.
    (The Yami teenage students, group 5)

The Yami teenage groups' ideas tend to support Young's (1990: 184) argument that the oppressed or disadvantaged should have 'group veto power regarding specific policies that that affect a group directly.' However, it might be impossible to settle the dispute over the siting of nuclear waste repository if the Yami are entitled to veto the nuclear waste repository as the Yami teenage student groups indicated. If local residents of any potential nuclear waste repository site in Taiwan also demand the right to veto nuclear waste, it would become hard to make a specific decision.

The Yami argument for the decision being made by the tribesmen involves the Yami's doubt about the current representative politics. The Yami representatives such as the elected Island Representatives and Head of the Island Administration are authorized to speak for Orchid Islanders. However, many Yami participants blame some of the Island Representatives for their failure to represent the Yami's opposition to nuclear waste. This extract from the Yami fisherman and housewife groups reflects their dissatisfaction with the Island Representatives that the decision was made in the absence of their voice:

F1   All islanders strongly object to the nuclear waste and we hope to remove it soon. The problem is that our representatives do not say so. The newspaper said that the Tao [Yami] are willing to lend the land for the repository. When we read this, our hearts were broken. When they [the Yami representatives] asked us to vote for them, they said that we would make the nuclear waste repository go. But they totally deceived us.

M1   Therefore, the Head of Island Administration we elected, the County Representatives we elected and the Head of Village Administration we elected are all useless. We don't identify with them. Why don't they talk to us about important events or decisions?
(The Yami fishermen and housewives, group 2)

The Yami's distrust in the Island Representatives is evident. The Yami fisherman and housewife groups, some professional participants, and the teenage student groups express their worry that the compromise between Taipower and the Island Representatives involves interest exchange. As one Yami professional participant says: 'We worry that some representatives might take bribes.' The Yami focus groups express their worry that any decisions made by the representatives would involve private interests rather than the good of the community.

2. The Government should make the decision

In contrast to the majority of Yami participants, the Yami Taipower employee group indicates that the disputes over nuclear waste needs the evaluation of experts. For them, those affected by the decision about the removal of nuclear waste include the residents around potential domestic or overseas repository sites. The Yami Taipower employee group regard it as a political issue, and insist that the government agencies should make the decision. Although nuclear waste management is seen as a scientific issue, the Yami Taipower employee group does not want the Yami to be excluded from the decision-making process. The extract below reflects the Yami's

feeling of powerlessness that the ethnic minority has little influence on the decision and lack of capacity for technical judgment:

M1 The decision should be made by the government.

F1 It surely depends on the government.

F2 We could not make the decision.

F1 It is impossible for us to make the decision...

M1 Ship the nuclear waste to the President's office, and see where the President will say.

Mod How about the role of the public?

M1 The anti-nuclear role. If not, then what?

M2 The smaller your voice is, the less the government will care about you. The louder your voice is, they will put emphasis upon it... It is not loud enough. We, a minority group, need the mass media to transmit our voice.

(The Yami Taipower employees, group 7)

As the disputes over the nuclear waste repository have been framed as scientific, economic and political issues in the Taiwanese groups (see Chapter 4), the Taiwanese professional participants claim that policy-makers should make the decision on the basis of scientific expertise to bring greatest benefits. They argue that nuclear waste is a collective problem, and that the Taiwanese public is also affected by the decision of nuclear waste management. On the other hand, the Taiwanese professional groups are critical of the Yami's reluctance to listen to others and suggest they are self-centered. Some express their doubt whether democracy is really helpful to solve complex disputes with social, political, environmental and technical aspects. The extract below shows that the Taiwanese groups worry that democracy might bring chaos and inefficiency:

M1 Chaotic! Each person, each opinion. Little leaders, each have one's preconceived ideas.

M2 It needs authority and high-pressure policy! Democracy... sometimes is not necessarily good.

M3   Even the disputes among the tribesmen [six villages] cannot be resolved ... they try to make progress during the last ten years, but there is no consensus. Chaotic ... each is engaged in their own interest, a many-headed carriage.
(The Taiwanese professional, group 9)

The discussion in the Taiwanese groups reveals the importance of an open mind to change one's opinions without the authority of prior norms or unquestionable beliefs when entering discussion on collective problems (Cohen, 1989, 22-3; Young, 2000: 24). As Young (2000: 25) argues, reasonable participants in a democratic decision-making process believe that some kind of agreement among them is possible in principle, and the form and content of an expression aims to be understandable and acceptable. Deliberative democracy is the exploration of the common good rather than simply the aggregation of the interests or demands of voters (Squires, 2002: 127; Bohman and Rehg, 1997: xii). Healey (1997: 67) argues that we might be able to learn about the claims we each are making and why, and reach a mutual understanding of each other through dialogue (see Chapter 7 and 8 for further discussion).

This section has reflected the divide between the Yami and Taiwanese groups regarding the issue of who should make decision and who should be included in the process of decision-making. Some Yami participants tend to claim that it is the tribe that affected by the nuclear waste repository, and that the tribe has the ownership to reject nuclear waste because Orchid Island is a gift given to the Yami by the Creator. The Taiwanese migrants on Orchid Island and other Taiwanese populations are not required to be included in the decision-making process of the tribal affairs, because the Yami consider that the Taiwanese people do not belong to the island. But there might be other interpretations of the concept of inclusion: for example, the governmental officials or the Taiwanese public might argue that all people in Taiwan should be included in the process to decide the permanent nuclear waste repository

site. Maybe Taipower could say that the impact of the nuclear waste repository on the Yami tribe is trivial, and that those affected by the repository mostly are Taipower employees. The closure of Orchid Island nuclear waste repository would cause the Yami Taipower employees to be jobless.

Deliberative democracy would allow both the Yami as well as the Taiwanese public to have a voice and be included equally in the decision-making process to influence the decision outcome, although the divide and conflict between the Yami and the Taiwanese groups would increase the difficulty in setting up the conditions for discourse in practice (see Chapter 6 and 7). However, the difference democrats are suspicious of the universal rationality of deliberative democracy. The following section will explore the critiques of deliberation to see whether deliberative process might still be unfair to the Yami minority.

Is deliberative democracy biased against disadvantaged groups?

Inclusion is a widely accepted condition of legitimacy of deliberative democracy. Young (2000: 53) argues that forms of exclusion sometimes occur when individual and groups are nominally included in the decision-making process. She charges deliberative democracy with privileging argument and unity and thus being biased against the disadvantaged such as the poor, ethnic minorities and women. After critical reviews of Young's argument against deliberative procedure, I will follow Miller's (2002) views that Young's critique of deliberative process is not valid, and suggest that the alternatives proposed by Young cannot provide an effective method of defusing the tension between the Yami and Taiwanese groups or helping enhance justice.

Young (1996) argues that most theorists of deliberative democracy restrict their concept of democratic discussion narrowly to critical argument, which would silence or devalue some people who have different ways of speaking. Sanders (1997) also argues that deliberation requires a mode of discourse that is rational, restrained and orientated to the sharing problems, which excludes ones that are impassioned, extreme and the product of particular interests. They claim that it accepts only those ways of making arguments that are formal, dispassionate and disembodied, discriminating against women and ethnic minorities whose distinct perspectives and concerns need to be presented in other ways. In order to address the problem of exclusion in modern democracies, Young (1996) proposes a more inclusive model of communication that attends to social difference and recognizes the cultural specificity of deliberative practices. As she puts it:

> The ideal of communicative democracy includes more than deliberative democracy, because it recognizes that when political dialogue aims at solving collective problems, it justly requires a plurality of perspectives, speaking styles, and ways of expressing the particularity of social situation as well as the general applicability of principles (Young, 1996: 132).

Young (1996) offers three modes of political communication in addition to making arguments to mitigate internal exclusion in the course of public discussion: greeting (public acknowledgement), rhetoric, and narrative (storytelling). Let us examine the problems of Young's modes of political communication.

Greeting

Greeting refers to those moments in everyday communication where people recognize one another in their particularity, including literal greeting, addressing

people by name, handshakes, making small talk before going to real business. In political interaction it functions to acknowledge relations of discursive equality and mutual respect, and to establish trust among the parties especially when they differ in opinion, interest and social positions, trying to reach some solution through discussion (1996: 129). Young (2000) takes the meetings of different villages or clans among the Maori people as an example to show that rituals of greeting are a formal part of the political practices of many non-Western and traditional societies. The Maori begin with several stages and forms of greeting before getting down to discussions, which has also influenced the political practice of New Zealand society (Metge, 1976: 249-53; Young, 2000: 59). Taylor (1994) insists that a politics of recognition is a basic element of justice and regards it as an ultimate goal that cultural groups seek in political interaction with others. Instead, Young argues that recognition is primarily 'a condition rather than a goal of political communication that aims to solve problems justly' (2000: 61). I will further discuss the issue of recognition in the following section.

For Young, greetings or public acknowledgment in political contexts serves as a starting-point for dialogue among the parties from the aborigines and the majority of the society. The respect for rituals of greeting of the aboriginals and the way they express their opinions help to reduce hostility toward others. For the disputes over nuclear waste on Orchid Island, the idea of greeting sheds light on the possibility of using the aboriginal language in the process of discussion. Mandarin was the main language used in the public meeting held by the Island Administration discussing Taipower's plan to extend the lease of repository in December 2002. I found most of the participants were Yami, with three Taipower representatives and a few Taiwanese migrants. Some of the Yami speak Mandarin and translate it into the Yami language

by themselves, while those elder Yami tend to speak their mother language. The public meeting lacked a translator to reduce the barriers to communication or possible misunderstanding. Although Mandarin is the official language, the use of the aboriginal language might contribute to the Yami's feeling of recognition.

But greeting, as Dryzek (2000: 69) argues, can be used to intimidate opponents. For example, several elder Yami worn the traditional dress and helmet that they wear only in battle against the enemies when they participated in public meetings, which symbolized their opposition. It might strengthen the opposing positions between the Yami tribe and those Taipower representatives and intimidate the Yami and Taiwanese participants who do not reject nuclear waste.

Rhetoric

Secondly, rhetoric, 'the ways that political assertions and arguments are expressed, has several functions that contribute to inclusive and persuasive political communication, including calling attention to points and situating speakers and audience in relation to one another' (Young, 2000: 53). Speech with rhetoric can involves jokes, anger, laughter, ridicule, flattery, and hyperbole. However, some deliberative democrats claim that deliberation should be confined to rational speech. Habermas' discourse ethic aims to distinguish rational speech from rhetoric because rhetorical speech serves a strategic function and involves manipulation (Bohman, 1988; Young, 2000: 63). Spragens (1990) views Hitler as a warning about rhetoric that intends to ignite passion. Benhabib (1996: 83) opposes Young's effort to theorize greeting, rhetoric and narrative as modes of political communication by arguing that 'it would limit rather than enhance social justice because rhetoric moves people and achieves results without having to render an account of the bases upon which it

induces people to engage in certain courses of action rather than others.' Young (2000) recognizes that public discussion often involves 'irrational appeals or manipulation of unconscious desires and fear', and that 'the clever rhetorician tricks his audience into accepting harmful decisions and policies' (p. 78). But she argues that these modes of communication are important 'additions to argument in an enlarged conception of democratic engagement' rather than a substitutes for argument, and 'rhetoric always *accompanies* argument, by situating the argument for a particular audience and giving it embodied style and tone' (p. 79).

What worries me is that inappropriate rhetoric might increase the divide among cultural groups rather than contribute to a solution and decision. In the public meeting in December 2002, one Yami, a member of the Orchid Island Land Inspection Committee,[42] expressed his anger with the news that four legislators had suggested the plan that Orchid Island become the permanent disposal site and the Yami be relocated. He said: 'those legislators should not say that and it has caused a confrontational position between the ethnic groups. No one ever proposes to move the Formosan Macaque to other places. We are asked to relocate, and we are inferior to the Formosan macaque.' This rhetoric contains an opposition to nuclear waste and relocation, anger with those legislators, ethnic relations and feelings of misrecognition. It might ignite the other Yami participants with antagonistic feelings and grievances, and the Taiwanese participants and Taipower Representatives had nothing to say about this. On the other hand, the rhetoric used by the Taiwanese participants and Taipower Representatives might lead to the Yami's suspicion of their intention. Too much rhetoric and the process of discussion might head toward deadlock or misunderstanding.

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[42] The Orchid Island Land Inspection Committee is composed of the Yami representatives from each village and functions to make decisions on how the land should be used.

Storytelling

The third form of Young's extended communication is narrative or storytelling, which is similar to testimony, or the telling of one's own story in one's language, proposed by Sanders (1997: 372). For Young (1996: 131-2), the parties often have the feeling that their own needs and ideas are not understood in discussion over conflict, especially where classes or culture separates the parties. She argues that narrative fosters understanding across such situations of differences in several ways: it can 'reveal the particular experiences of those in social locations, experiences that cannot be shared by those situated differently but that they must understand in order to do justice to the others', 'reveal a source of values, culture and meaning', and provide 'a total social knowledge from the point of view of that social position.' The Yami focus group discussions, especially those of elder Yami fishermen and housewives, exhibit their experience and values by telling stories of their life, illness, the variety of impact of the nuclear waste repository and the attempts to make listeners understand their situation.

However, Benhabib (1996: 83) rejects narrative as unsuitable for the public language of institutions and legislatures in a democracy. She argues that narrative would create capriciousness and it might happen that some simply cannot understand the stories. The Taiwanese focus group discussion showed that they have heard a lot of the Yami stories in daily life, but that some of them still cannot understand why the Yami have those values and priorities. The Yami Taipower employee group pointed out that there are a lot of retold stories and one needs to judge who to trust. The story about the healthy Yami Taipower employees is in conflict with the stories about illness and poor yields caused by the nuclear waste (see Chapter 4). What concerns me is some Yami might have got opposing experience but feel they need to follow the

same storyline just to show the acknowledgement of fellow tribesmen. The story might be retold instrumentally for the particular purpose of evoking sympathy and getting the nuclear waste removed.

Young recognizes the dangers of manipulation and deceit in greeting, rhetoric, narrative and other forms of communications. For example, narrative sometimes is manipulated to win irrational assent and stories could be 'false, misleading and self-deceiving'. She argues that argumentative discourse can involve deceit and manipulation as well and it needs criticism to address false or invalid arguments. The remedy for false, manipulative talk is 'more talk that exposes or corrects it', and the listeners to greeting, rhetoric, narrative and other forms of communications should critically evaluate them (2000: 77-9). Similarity, Dryzek (2000: 167) argues for discursive democracy that accommodates difference and allows a plurality of discourses in deliberation beyond rational argument. He argues that deliberation should admit other forms of communication proposed by difference democrats only if they do not involve coercion, and are capable of connecting the particular to the general. Those forms of communications proposed by Young should be excluded if they fail to meet these criteria.

Dryzek (2000: 167) recognizes the value of rhetoric as an important mode of communication in deliberating across difference and across the boundary between the state and the public sphere. But rhetoric can coerce its audience by manipulating their emotions and this is why some deliberative democrats like to purge it. Furthermore, storytelling can coerce the storyteller especially when group norms constrain the range of acceptable stories. An individual story can fail to resonate with individuals who do not share that situation (pp. 68-9). The threat of coercion can be found in the discussion among the Yami. The elderly Yami are respected in the tribe and those

who speak first in the focus groups or public meeting tend to be the elder ones. Those younger Yami storytellers might avoid making challenges to the expected storyline. For Dryzek (2000: 71, 168), argument can also be coercive as the result of failure to connect the particular to the general or the suppression of any challenge to the particular. However, rational argument is capable of exposing these failings in itself and applied to the context in which storytelling proceed to prevent coercion of the storyteller by the group. He claims that argument always plays the central role in deliberative democracy in terms of communicative failures and collective action regarding a social problem, while other forms of communication can be present but not necessary.

Miller (2002: 208) argues that it is too easy to add greeting, rhetoric and storytelling to the deliberation by treating them as additional forms of dialogue. He argues that the accusations made by Young and Sanders is not valid. For Miller, Young and Sanders' charge that deliberation privileges rational speech and formal reasoning at the expense of emotional speech and the concrete concerns of particular groups relies on a false dichotomy between reason and emotion. Political speech, to be convincing, requires both passionate expression and rational argument. Political argument often takes the form of linking the situation of a particular group with some general principles that has been applied in the past to other groups and now commands general assent (pp. 213-4). Furthermore, Miller (2002) recognizes that deliberation encourage participants to adopt moderate proposals rather than the extreme ones, to be willing to give up their initial claims for the sake of reaching agreement. He claims that democratic deliberation allow each perspective to be considered equally in the course of deliberation, but cannot ensure that any specific or single perspective will prevail in the final outcome (pp.213-6). I think Miller is right that rhetoric or

introducing unfamiliar perspectives into democratic debate can be a divisive force in situations of conflict that 'weaken each groups' commitment to deal justly with the others.' The public meeting on Orchid Island in fact manifests the problem of one-way communication and the tension caused by rhetoric, which seems to have led to some Taiwanese migrants lose interest in participating in similar meetings. With Miller, I do not see that the forms of discourse advocated by Young and Sanders are likely to serve the interests of the Yami better than a process of reasoned argument.

However, there is a possibility of weakening the tribal solidarity of the Yami tribe if rhetoric or storytelling is completely restricted in deliberative democratic settings. Certain kinds of speech might have a function of maintaining the group boundary. The particular ways of dressing or expressive statements could make a strong sense of who is in the group and who is outside the group (Bell, 1997: 193). For weak and marginal groups, particular way of communication might create a sense of agency or tribal identity. Will it end up fragmenting the community or tribe if we say no to storytelling or rhetoric and allow reasoned argument alone? Is reasoned argument good solely for the powerful groups? Although it is important to recognize various forms of communication of knowledge in a pluralist society, reasoned argument and intercultural dialogue could serve the interests of the minorities as well. The point here is to positively encourage reasoned argument, dialogue and interaction both between the Yami and the Taiwanese groups and within the Yami tribe in order to increase mutual understanding rather than enact an absolute prohibition of storytelling or rhetoric in any deliberating processes.

Miller argues that 'democratic deliberation that serves the cause of social justice is most likely to occur in a community whose members share a common identity that transcends their group-specific identities.' He puts emphasis on the sense of

commonality provided by a shared national identity that can support the trust and mutual respect necessary for deliberation. Mansbridge (1980) also suggests that a participatory democratic forum applies only in contexts where people already share many goals, interests, and premises, or life experience. However, Young (2000) objects against theorists of deliberative democracy that assume the idea of common good or commonness as a prior condition of deliberation, or as a goal of deliberation, because the appeal to shared understandings or the assumption of commonality 'may exclude or marginalize some people or groups' (p. 41). I would argue that the idea of common good or a sense of commonality could enhance positive group interaction and commitment in the process of discussion, and defuse the perceived social distance and tension between groups, rather than repress group differences (see Chapter 7). Young's (1996, 2000) inclusive model of communicative that is open to plural speaking styles and perspectives might not necessarily facilitate the dialogue across cultural difference and social position, or increase a feeling of recognition and understanding. It would involve too much emotion and irrationality injected into the discussion. The value of rational discourse and debate should not be neglected. I will further discuss the importance of the reconstruction of a broader community and a pragmatic approach to intercultural dialogue that could bring the Yami and Taiwanese groups together to deal with the nuclear waste problems in Chapter 7.

Recognition struggles and just distribution

The environmental justice discourse on recognition shows that the problematic distribution of environmental risks tends to interweave cultural status and socioeconomic inequality (e.g. Schlosberg, 1999, 2003). Fraser (1997) and Young (1997) argue that it would be a problem if a political focus on recognition is

disconnected from socioeconomic injustice (see Chapter 2). This section explores the

relation between recognition and distribution, including the problems of recognition

surrounding the disputes over the nuclear waste repository on Orchid Island, the

disputes over the Yami tribal name and landscape renaming, and the implications of

the Yami's demands for aboriginal autonomy.

The problem of recognition

The Yami fisherman and housewife groups and professional groups do use

recognition language to express their feeling of dissatisfaction with the Government

and Taipower's dumping of nuclear waste on their homeland without Yami consent

(see Chapter 4). As mentioned in Chapter 1, in 1997 the Yami got the oral promise of

Taipower and the Taiwanese authority to remove the nuclear waste by the end of 2002.

Owing to Taipower's failure in finding a replacement for the nuclear waste storage,

the Economics Minister came to Orchid Island and apologized to the Yami, seeking

the tribe's understanding that Taipower has done their best on site evaluation, and

explaining the government's plan for handling the nuclear waste and for forming a

monitoring panel.

The delay in removal has caused experiences of lack of recognition amongst the

Yami. The Yami fishermen and housewives, and the professional groups, tend to feel

that the Government and Taipower do not pay much attention to their voices. As one

Yami professional says: 'I feel that the government is perfunctory and does not care

for the minority.' The Yami fisherman and housewife groups express their

disappointment that their protests have not made any changes. 'We came to protest at

the nuclear waste repository and travelled to Taiwan [island] to protest as well. But

our voice was treated as the wind around the ear. They [government officials] do not

really listen to public opinions about removing nuclear waste'. 'They prolong, and prolong again. We do not hear the specific date of removal instead of delay.'

The fieldwork on Orchid Island was carried out in December 2002, which was just after the event at which four legislators made a speech about a proposal to buy Orchid Island for permanent nuclear waste storage. The Yami focus group participants actively express their feelings about the plan when they are asked to talk about other related issues. The majority of the Yami groups tend to regard the remarks about asking the Yami to relocate as lack of respect for the tribe. The extract below from the Yami fisherman and housewife group and professional groups reflect how the remarks have made them feel depressed and annoyed:

F1   At that time when I heard the present legislators saying about the purchase of our Orchid Island by money, I felt they really do not respect the Tao [Yami]. Owing to the their remarks in the meeting, our hearts have been hurt, almost broken.
(The Yami fishermen and housewives, groups 2)

F1   I have lived with the nuclear waste since my childhood, and I did not know much about this. When I was growing up, I have a stirring of emotion and feel that they do not respect the voice of us.
(The Yami professionals, group 3)

M1   Some legislators talk about buying Orchid Island, but why not remove the nuclear waste to Taipei? Although we are a political minority group, life is the same. Politicians should control their remarks, and respect local people.
(The Yami professionals, group 4)

The Yami focus groups reflect a strong sense of place and belonging to Orchid Island (see Chapter 6). The land appears to have significant meanings for the elder Yami. As one Yami fisherman puts it: 'Although we have no money, I will not move to Taiwan [island] for the money, even tens of millions as they said. Because this is our place, some elderly people say, "a fallen leaf will return to the root". The place where they

were born is also the place where to die.' The idea of asking the Yami to relocate is seen as analogous to 'buying and selling black slaves' in one Yami professional group. It also causes one Yami professional participant's concerns about the grave on Orchid Island, the place where the Yami ancestral spirits inhabit. As he puts it:

M1   A few Taiwanese legislators said to buy Orchid Island for permanent nuclear waste storage. How could they say that way? They should identify with us and feel for others. This is our home, Taiwan's last pure land. What can we deal with our ancestral spirits [graves]? Where could we remove them to? This is the land our ancestors have left us. How could we sell it?

The Yami fisherman and housewife participants expressed their faith that all things on earth are created by God. They stress that people are not allowed to do whatever they want to, such as destroying the environment. The Yami fisherman and housewife groups express their worry about the nuclear waste being a threat to the continuity of the tribe, and seem to regard the tribesman as the custodian of Orchid Island. The extract below from the Yami fisherman and housewife group reflects their demand for the recognition of difference:

F1   We hope that the state respects us, the Tao tribe. If the Tao tribe was really destroyed by the nuclear waste...where will they find the Tao tribe? The Tao tribe is the most distinguished in Taiwan and most united as well. How could they harm us in that way, the innocent? We cherish our land very much and love our children and offspring deeply. I believe that God must be unhappy about our Taiwanese administrations.
(The Yami fishermen and housewives, group 2)

Recognition as an element of environmental justice discussed in Chapter 2 shows that the problem of misrecognition is not just about an institutional relation of social subordination as suggested by Fraser (1999), but also involves the aspect of the subjective-subjective forms of mutuality and identity (e.g. Taylor, 1994; Macdonald

and Merrill, 2002). The Yami fisherman and housewife groups express the need of mutual recognition. The Yami fisherman and housewife participants tend to describe themselves as 'tiny inhabitants' and 'people of trifling importance', and express their hope that outsiders can understand their stories and feelings, retelling them and supporting the Yami tribe. They appear to see their voice as neglected. As one housewife says: 'We don't hope that people think that they need to interview the Head of Island Administration just in order to announce the opinions of Orchid Islanders because of his position.' Thus, the Yami fishermen and housewives tend to regard outsiders' concern about the tribe and their views as recognition of worth. One Yami housewife believes that it was God's special arrangement that I came to hear their voice. As she say: 'We thank God that you [the researcher] come to listen to us and care about us. We hope that after they [the researcher and the assistant] have heard, they can write down on paper to let more outsiders hear us, the Tao [Yami] tribe's heartfelt wishes.' Another participant echoes: 'We will feel that you are in alignment with us.'

Hegel's (1977) idea of mutual recognition discussed in Chapter 2 emphasizes that recognition counts only from beings whom we recognize to have a worth. The Yami fisherman and housewife felt that the government officials does not recognize the Yami or respect their voice. Thus, it seems that the government officials could not expect the Yami's recognition. As one man say: 'People of the government will not see things through our eyes, and we will not talk to those from the Government. Because you [the researcher] are not the people of the government... We can talk about everything to those who are not from the Government.'

While the Yami fishermen and housewives expressed their welcome to those who come to hear their voice, some of the Yami intellectuals and elites who have been

engaged in the anti-nuclear waste campaign appear to doubt the intention of the Taiwanese or outsiders who come to inquire about their opinions. One Yami intellectual refuses to participate in an informal interview, saying: 'I don't want to say anything. There are so many [Taiwanese] people who come to Orchid Island to interview or do research. They all said that they would help us, but the nuclear waste repository is still here.' His talk reflects the feeling of powerlessness to make any difference. It seems that some Yami campaigners' opposition to nuclear waste, Taipower and the authority, has led to their indifference towards the Taiwanese community.

To sum up, the disputes over the nuclear waste repository have contributed to the Yami sense of misrecognition, including the past authoritative governance that dumped nuclear waste on their homeland without Yami consent, Taipower's casual reaction to the Yami opposition and delay in honouring its promise to remove the nuclear waste, four Taiwanese legislators' remarks that offend the Yami, and the interaction between the Yami tribesmen and the government officials. The Yami tend to feel that their voices are being neglected and that the tribe is excluded from the decision-making process. This manifests the need for mutual recognition of the interaction between the tribe and Taipower and the government officials as well as the demand for cultural status in politics. The Yami fishermen and housewives, professional and teenage student groups indicate that they attempt to use various ways of making their voice known to the government officials and outsiders, such as participation in public meetings, protest, publishing articles on Internet bulletin boards, or signing a petition which expresses the Yami's demand for aboriginal autonomy discussed in a later section. The problem of recognition surrounding the nuclear waste

disputes intersects with the Yami struggles for the correction of the tribal name and for landscape renaming.

The disputes over the tribal name and landscape renaming

The 'Yami' name has been used by outsiders and Orchid Islanders for a long period of time, and can be traced to the Japanese colonial period, as Japanese anthropologists adopted the name to refer to islanders and came to be used by the outsiders (Limond, 2002a). The Yami elites appeal to change the Yami name to Tao on the basis of their mother language and historical meaning rather than the one given by government officials or outsiders. So far the disputes have not reached consensus. On the other hand, the Yami elites consider that the outsiders' naming of the landscape on Orchid Island represents the extension of cultural invasion and denies the meaning given by the tribesmen based on their life experiences and cosmology.[43] The Yami elites seem to regard the tribal name and landscape names given by the Han government as a kind of cultural domination.

The disputes over the street names of Taipei offer another similar example. According to Leitner and Kang (1999), the street names of Taipei that refer to Mainland China geography represents Chinese nationalist's promotion of the concept of a Chinese nation and national identity in an effort to legitimise political power. For example, streets in the northern districts represent northern regions of China, naming the streets after the cities of the mainland. However, the Democratic Progressive Party (DPP) that advocated independence of Taiwan recommended renaming parts of the

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[43] Taiwanese people name the huge rock on southeast Orchid Island 'dragon rock', because the shape of the shape is like the totem of the dragon. However, the tribe calls it 'Jimazicing' in their mother language, which symbolizes the end of the island and its role as an important guidepost for sailing. The other northwestern rock on the island is also a maor guidepost for sailing and both rocks have meaningful symbols in their traditional worldview on the Ocean. See Shiaman lanpoan, (2002). Thinking geographical names and non-native names, *UNITAS*, 216. (In Chinese).

street. The issue involves the arguments about the nature of Taiwanese sovereignty and who has control over the streets of Taipei. Finally, the result of renaming a street after the indigenous ketagalan people reflects the DPP government's promotion of an alternative Taiwanese nation and national identity, a 'non-Chinese' history, and the questioning by aboriginal people of the Taiwanese nation as a unitary category (Mitchell, 2001: 275). This event also fosters a greater reflexivity in Taiwanese society about the importance of recognition of indigenous peoples and cultural differences.

The Yami fisherman and housewife groups and some Yami professionals call the tribe 'Tao' in their discussion over the nuclear waste disputes (see Chapter 4). According to the Yami Taipower employee participants, those who call themselves Tao tend to be churchgoers, talkative or like to express themselves. The Yami preachers tend to be those who support the adoption of the Tao name, which has great effects on those Yami fisherman, housewife and professionals who participate in church activities. The Yami focus group participants are asked to talk about their views on the tribal name disputes, and what I should call the tribe. The extract below shows that the dispute over tribal name does not have much symbolic importance for the Yami teenage student participants:

Mod Are you using the Yami name or Tao name?
F1   It does not matter.
M1   It is OK to use both.
F2   It only represents a name.
M2   One can use either, as one likes.
F3   It has no great meaning for us to argue about this.
F4   'Tao' means 'people'.
F2   The Yami name is OK.

(The Yami teenage students, group 5)

Likewise, the Yami Taipower employee participants express their doubt whether it is necessary for the tribesmen to argue about the correction of the tribal name. As one woman says: 'Some are not very in favor of the 'Tao' word, so we still use 'Yami'. Tao and Yami … to argue about this. Why don't people think about how to raise our living quality and how to let our children's education get better? They do not think about this … only think about the name. I feel that it is very meaningless. Therefore, we are still the Yami.' Other participants also put it: 'We are not the Tao tribe yet because government has not regarded it as an official name.' 'It seems that the Yami name is still used.'

In summary, there is a divide between the Yami elites and the Yami public as well as disagreement among the lay public. The Yami elites regard the change of the tribal name and landscape renaming as part of recognition struggles, which symbolize the ownership of Orchid Island and the elimination of cultural domination. The Yami elites' claims for symbolic or cultural justice have affected the Yami fisherman and housewife groups and some Yami professional participants who call the tribe Tao. While the Yami elites are more concerned about the symbolic meaning of the tribal name and landscape renaming, the Yami teenage student and Taipower employee groups tend to emphasize the aspects of social and economic equality. It is significant that both aspects of recognition and just distribution are present in the discourse of the Yami fisherman and housewife groups and some Yami professional participants.

The demands for aboriginal autonomy

Demands for recognition and autonomy are crucial components of the environmental justice movement (see Chapter 2). The disputes over the nuclear waste

repository on Orchid Island has accelerated the Yami's pursuit of tribal autonomy, which became one of the Yami's main concerns. The Yami elites declared the establishment of the 'Orchid Island Tao tribe aboriginal autonomous committee' and released the 'Declaration of autonomy for Orchid Island' on 24 May 2000 after the new DPP President made his inauguration speech. The Yami is the first to appeal for autonomy among the twelve aboriginal groups. The President made his promise to promote an autonomous district for aborigines during his election campaign. In his inauguration speech, he emphasized that 'Taiwan cannot and will not be outside the global trend toward human rights.' In the autonomous declaration, the Yami elites linked the president's human rights promise to the 1994 UN Declaration concerning indigenous peoples that all indigenous peoples have the right to enjoy human rights (Limond, 2002b: 25).

The aim of the aboriginal autonomous district is to pursue tribal political, economic, socio-cultural and territorial-environmental rights, and tribal and cultural continuity and respect. According to the declaration, Orchid Island was used as a 'anthropological laboratory' for Austronesian research during the Japanese colonial period (1895-1945), the policy of KMT government for modernisation and assimilation has led to cultural loss, and the event of dumping nuclear waste on Orchid Island represent the tribe's suffering from domination and exploitation. The Yami elites use a Taiwanese parable to describe the way of government on Orchid Island: a beggar going to a temple to beg and chase the abbot. The Yami is seen as the abbot or master, and it implies that the tribe want to regain the status of the master of Orchid Island (Lu, 2002). In the autonomous declaration, the Yami: advises that the government establish an autonomy committee and arrange a budget for the process, and give Orchid island its autonomy by 2004; demands that access rights to the land

and ocean of Orchid Island be frozen for outsiders to protect the environment; and calls for the government to agree a timetable for the removal of nuclear waste.

Furthermore, the Yami elites declared the establishment of 'the aboriginal parliament preparatory committee' on 25 October 2002. The Yami elites proposed a Yami collective governance model and the vision of self-government. The Executive Yuan passed a draft bill giving autonomy to aboriginal tribes in June 2003 in response to the demands of the aborigines and to realize the President's promise; the bill needs to proceed to the legislature for further review and final approval. According to the bill, the autonomous district would have its own law, land ownership, political structure, and economic and social system.[44]

During the fieldwork period in December 2002, there was a public meeting held by the Island Administration and Taipower regarding the issue of Taipower's land lease renewal for the nuclear waste facilities, as the lease on the land would expire on 31 December 2002. The way in which the Yami speak in the public meeting reflects the demand for political and cultural status. Besides Taipower representatives, the majority of attendants are the Yami include the Head of Island Administration, Orchid island Land Inspection Committee (comprised of the Yami village representatives), the elected Island Representatives, village leaders, and the Yami public. Only a few Taiwanese migrants attended the meeting. Taipower attempted to explain to Orchid Islanders the failure to remove the repository, seeking for the Yami's understanding and consent to extend the lease for next nine years. The explanation certainly did not satisfy the Yami. The members of Orchid Island Land Inspection Committee opposed agreeing to Taipowerextending the lease, and expressed their dissatisfaction at the delay in removal. The Yami representatives reject communicating with Taipower

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[44] Taipei Times, 03/06/03. Available at
http://www.taipeitimes.com/News/taiwan/archives/2003/06/03/2003053761(last accessed 15/10/03).

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because they thought that Taipower could not make the decision. As one member of the Yami committee says, 'Ask the senior officers of Ministry of Economic affairs to talk to us, you could not make the decision. The Premier of the Executive Yuan and the Minister of Economic affairs should come, you are not qualified to negotiate with us. Taipower is the executive unit and you go to inform the Ministry of the Economy.' The demand of the Yami members of Land Inspection for higher-level Taiwanese government officials to communicate with the Yami implies their seeking for recognition of the tribal status or symbolic justice.

Lu's (2002) research into the Yami's viewpoints on autonomy found that the opinions of the tribe are divided. The Yami elites regard autonomy as a way to solve the problem of domination and to preserve traditional culture. However, many of the Yami oppose autonomy and worry whether autonomy would affect their living, since the tribe has relied on financial support from the outside for a long time. The Yami teenage student groups reflect on the condition of the tribe and consider that the disadvantages of autonomy far outweigh the advantages. One boy likens the disadvantage of autonomy to the situation that one falls down and no one cares, and thinks that the tribe will be bullied. The Yami teenage participants do not think the tribe could afford to be autonomous because of the lack of talent. They points out that there are only two or three teachers from the tribe at their school, and the majority of teachers are Taiwanese. The need to make effort to cultivate those Yami of talent is seen as the primary task in the teenage focus groups.

Likewise, the Yami elites' advocacy of aboriginal autonomy is treated with scepticism by the Taiwanese professional groups. As one says: 'How could they regard it as so simple...autonomy.' For some Taiwanese professional participants, it seems to be contradictory that the Yami intellectuals or representatives do not want to

be governed too much, when the tribe is actually over-dependent on the government grant. It is regarded as more crucial to think about how to do better on the conservation of tribal culture rather than to campaign for autonomy. Furthermore, the way the Yami tribe makes decisions is seen as peculiar. As one man puts it: 'The order to make a speech is based on age, the numbers of pigs and goats, one's knowledge and position in the family tree, etc. People here... any decision needs everybody's agreement. It sometimes has no final decision in the meeting. They discuss and compromise with each other, but sometimes the decision is based on some people's opinions. A few people might have the final say, and voting will just be for appearance.' It concerns some Taiwanese professional participants that tribal decisions would be dominated by some Yami elites if Orchid Island became an aboriginal autonomous district.

Many of the Yami groups expressed their dissatisfaction with Taiwanese democracy and the current political structure. Some Yami participants do not feel that the authority respects their voice and rights to life because their limited participation in the decision-making processes could not lead to the policy results they want or to ideal, just outcomes. The aboriginal district would represent the recognition of tribal difference if the government grant Orchid Island its autonomy. However, autonomy may be not an end in itself for the Yami, as most of the Yami public has greater concern about the better distribution that autonomy could bring, such as medical services, social welfare and better financial conditions. Autonomy tends to function more as a means to address structural inequalities and gain just distribution. The Yami public tends to confirm Young's (1997, 2000) argument that recognition usually is part of or means to the broader ends of structural and social equality, rather than a distinct goal of justice. But those Yami elites or representatives who have good

economic conditions may just seek recognition rather than some socioeconomic redistribution.

Conclusion

People have different moral principles and ideas of justice. A set of social understandings that govern the distribution of goods for one culture would be different to another (Gutmann, 1993: 173). The moral principles of social justice in the Yami society, which typically relate closely to the practices of Yami culture, would be different to those of Taiwanese society. Instead of adopting the cultural relativist view that social justice is what any particular culture deems to be just, I argue that participatory and deliberative democracy is necessary for environmental justice discourses. It could let us reflect about what we think and understand, and learn to respect individual and the cultural dimensions of differences through dialogue. I will return to this later.

The Yami's demand for autonomy reflects recognition struggles, as well as being a component of the claim for structural equalities and just distribution. The Yami elites tend to stress the demand for symbolic and cultural justice, including the issues of the tribal name, landscape renaming, and asking for higher-level Taiwanese government officials to communicate with the tribe. Issues of recognition and just distribution are both present in the Yami fisherman and housewife groups and professional groups, while the Yami teenage student and Taipower employee participants tend to emphasize struggles for redistribution. I suggest that a democratic and participatory procedure is likely to bring recognition or help the situation of lack of recognition improve, which could facilitate more just distribution (see Chapter 7).

Chapter 6 The multiple understanding of environment justice

This chapter explores the Yami and Taiwanese perspectives on the conceptions of environmental justice, and the implications for environmental justice discourses and nuclear waste disputes. Several central notions of environmental justice have been found in the Yami and Taiwanese focus groups, including the good life, duty, rights to life, fairness, utilitarianism, democratic procedures, and social morality. It begins with an exploration of existing research on these conceptions, and then discusses how they are regarded differently in the context of Orchid Island. Considering cultural differences and the competing notions held by the Yami and Taiwanese groups, the second section offers an examination of the barriers to coalition between the Yami and Taiwanese groups for environmental justice, and the emerging networking of indigenous peoples or cultural groups.

The Yami and Taiwanese perspectives on environmental justice

Environmental justice discourses connect social justice and environmental concerns, which involve issues of equity in distribution of environmental goods and costs, democratic and participatory decision-making processes, the elimination of structural domination, as well as recognition of diverse communities and cultural difference (see Chapter 2). According to Taylor (2000: 509), environmental problems are social problems, 'socially constructed claims defined through collective processes', and environmental justice has been understood through the concepts of social

construction, framing and social movement theory. Zerner (2000: 116) also argues that a vision of environmental justice needs to 'examine critically the cultural dimensions of competing visions and struggles over citizenship, rights, and cultural identity in concrete situations.' This section provides a contextualized example that offers understanding of the conception of environmental justice grounded in a particular context and experience.

Focus group participants were asked whether they have heard about the term 'environmental justice' and what comes to mind when hearing the phrase. Although most of the participants have not heard about the term environmental justice, all groups could capture the broad sense of the term as good for the environment and human beings. Environmental justice has been framed in terms of the good life, duty, rights to life, respect for the environment, fairness, democratic procedures and social morality. These notions are interconnected in the focus groups. Table 6.1 represents the Yami and Taiwanese groups' understanding of environmental justice with different focuses, and sometimes their interpretations or arguments about the notions conflict.

Table 6. 1 The Yami and Taiwanese perspectives on environmental justice

Focus groups / EJ	Yami fishermen & housewives	Yami professional group	Yami Teenages	Yami Taipower employees	Taiwanese professionals
The good life	*				
Duty	*	*			*
Rights to life		*			*
Fairness	*			*	*
Utilitarianism					*
Democratic procedures	*				*
Social morality			*		

The good life

A good life can be defined in a variety of ways. In Aristotle's *Politics*, the end of the state is the good life, understood in terms of the virtues. Aristotle claims that the best political association enables every man to act virtuously and to live happily (1948: 118, 280). However, Aristotle's position has been criticized by Larmore (1987: 43), who argues that the 'monistic' view of human fulfilment and the perceptible hierarchy among conceptions of the good life is incompatible with the multiplicity of ways of good life in modern times. O'Neill (1993, 1997a) defends Aristotle's position by arguing that human beings are able to achieve a complete and self-sufficient good only within the polis in which individuals are able to enter a variety of relations and pursue diverse and distinct goods. The polis has the comprehensive goal of realizing the good of 'the whole life', which is compatible with a pluralist view of the political community. He argues that there are a variety of forms in which a flourishing life can be led that realise quite different kinds of good (1997a: 50, 55). For O'Neill (1993, 1997a), the Aristotelian position is based on a pluralism of recognition, which recognise the virtues of an association or community, and the possibility of vices, as well as the existence of conflicts between values in particular situations and social choices. He argues that the 'historical and narratory dimension of our individual and communal lives is of particular significance in the environmental sphere.'

The Yami fisherman and housewife groups understand environmental justice in terms of the good life. For the Yami fishermen and housewives groups, Orchid Island has been polluted as tourism and nuclear waste came and affected their traditional way of life. They express their anxieties about nuclear waste that crops and water have been contaminated. The extracts below from the Yami fisherman and housewife

groups reflect the strong associations between the tribe and land, and their memory of the past unpolluted Orchid Island:

Mod Have you heard about the term environmental justice? What does it mean to you?

F1   In the past, Orchid Island was all green, very beautiful...

M1   The very beautiful island. Since tourism deregulated in 1972, all things came, including the garbage. Finally, the nuclear waste came and remains. *Huan jing* [the environment] cannot be clean. The stream could be used for drinking, but can it be now?

F2   We live on this island, but we are not dare to eat many leaves of sweet potatoes and wild plants because they have been polluted.
     (The Yami fishermen and housewives, group 2)

The elder Yami fishermen and housewives' relationship with Orchid Island corresponds to Norton's (1997a: 25; 1997b) idea of a 'place-based' value. For Norton, place-based values emerge from a local dialectic of culture and nature. People express the distinctive identity of the place. The values reveals a commitment to one's past and a commitment to the future of human and ecological community. Harvey (1996) takes Native Americans' relationships to the physical world as an example to show the linkage between the idea of place, memory and identity. As he writes, 'native-Americans engage in a moral act of imagination that constitutes an understanding of the physical world at the same time as it constitutes an understanding of themselves. From this it follows that losing the land is equivalent to losing identity...' (Harvey, 1996: 305). The nuclear waste repository has led to the Yami fishermen and housewives' uncertainty of the world and the feeling of helplessness:

F1   You could see what the previous *huan jing* (environment) was like, how nice it was. Like what our elder said, you could drink the water directly, but now you have to drink boiled water. However, we still do not know whether it has been contaminated or not, even it is boiled. Because it is not visible, like the wind. Therefore, good or bad is in God's hand.

(The Yami fishermen and housewives, group 1)

The young Yami might be in pursuit of different forms of the good life. The tribal life could not be the same as in the past, since the Yami has experienced continuous contact with the outside world. Nowadays the Yami can buy products and foods that the tribesmen could not make by themselves. Transportation and electricity bring them convenience. The Yami can accept good medical treatment if they get ill. They can make a living by the tourism industry and play different roles in the division of labour. Do the Yami want Orchid Island isolated from the outside world, rejecting all materials from the civilized world or simply saying no to nuclear waste? What are the crucial elements of the Yami good life?

Some Yami fishermen and housewives' accounts of the good life are expressed in narrative terms. One non-Yami aboriginal man on Orchid Island gives us an example:

> There was a prison in Dangqing [village] in the past and it had been moved. The Island Administration had the idea to develop a culture village to promote the tourist industry and increase job opportunities, but the Yami do not think so. They want to get the land back and plant taro, and the notion seems out of date. Is it not good? Development seems not only good for the small numbers of people but also the greater numbers of future generations. But on the other hand, if we want to see the original landscape, why not let people here [the Yami] make the decision.[45]

For many of the elderly Yami, their particular traditions, social and cultural life and the continuous narrative of the tribe on Orchid Island would be crucial for the good life. For Schlosberg (1999), recognition and validating the differences of experiences people have in their environments, the cultures that inform those experiences, and reactions that emerge from them is at the heart of environmental justice. The

Principles of Environmental Justice ratified at the First National People of Color Environmental Leadership Summit put emphasis on cultural relationships, which includes respect for each other's belief systems about the natural world and 'an appreciation of diverse cultural perspectives' (Taylor, 2000: 540, 567). The Yami fisherman and housewife group's perspective provides resonance with a pluralistic view on environmental justice that emphasizes recognition of different kinds of the good life.

Duty

The idea of duty refers to a moral obligation that an agent or a person has towards another person. Etymologically, duties are actions that are *due* to someone else, such as paying money that one owes to a creditor. In a broader sense, a duty is a binding, normative requirement. Traditional duty-based ethics in the 17th and 18th centuries involves the list of prescribed duties, including duties to God, duties to oneself, and duties to others. One of the main questions concerning duties is who or what binds us. One traditional view on the ground of duties is that God has authority over us and can impose duties on us.[46] A religious conception of duty indicates that the account of the duties the believer gives is in terms of 'the will of God' (Phillips, 1964: 407). Kant endorses the distinction between duties to oneself and duties to others, but he regards the traditional duties to God as more of a matter of natural religion than of ethics. He argues that we do not have special duties to God because

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[45] The plan for development halted and the Yami still use that land in the traditional way.
[46] The Internet Encyclopedia of Philosophy. http://www.iep.utm.edu/d/duties.htm#top
Routledge Encyclopedia of Philosophy.
http://www.rep.routledge.com/article/L018?ssid=76327338&n=1#

we cannot know that the existence of God and whether he has revealed his will. For Kant, the notion of duty is ultimately based on the categorical imperative.[47]

Environmental justice has been framed in terms of duty in the focus groups. The Yami fisherman and housewife groups provide relevance to the religious identification of duty with the will of God. They assert that God creates the Yami tribe and regard themselves as the stewards of Orchid Island. The importance of the Yami's doing the will of God is illustrated in the following extract:

F1 I hear the news that there are legislators saying to buy Orchid Island [for permanent nuclear waste storage]. ... But could they buy? God gives us this land, can they buy? God gives us life, can they buy? Thus our land could not be sold as they said. Such a beautiful land. God gives us prosperity and we could not sell to them.
(The Yami fishermen and housewives, group 1)

The Yami fishermen and housewives groups further recognize their duty given by God as preventing the environment from destruction. Those deeds that are harmful to Orchid Island are seen as environmental injustice and it is the duty of the Yami to stop it:

F1 *Huan jing zheng yi* [environmental justice] means that we need to stop those who destroy our *huan jing* [the environment].
F2 Local people or outsiders who throw garbage carelessly would affect our *huan jing* [the environment]. Those problems that people do not love *huan jing* and destroy *zi ran* [the nature] are *huan jing bu zheng yi* [environmental injustice]. We ourselves need to protect *huan jing* and do our duty.
(The Yami fishermen and housewives, group 2)

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[47] Kant draws on duty theory in his early *Lectures on Ethics* (1780), and also in his later ethical writings: *Foundations of the Metaphysics of Morals* (1785), *Critique of Practical Reason* (1788), and *The Metaphysics of Morals* (1798).

The ideas of the Yami fisherman and housewife group appear to correspond to Norton's (1997a) point of a cultural community that is conscious of its natural history and practices they have developed. The members of the community might feel an obligation to protect natural and ecological features that support and give meaning to their culture and valued lifestyle, and to 'maintain the conditions of shared experience across generations within a cultural community' (p. 27). The Yami fisherman and housewife participants' concept of duty contains the concerns about the inseparable relationship between the tribe and the environment, and the present and future generations. Likewise, one Yami professional group recognizes the duty of the present Yami tribesman to not leave their offspring with environmental burdens: 'We, this generation, have duty ... we do not hope next generation to bear the burden of nuclear waste again.' 'If nuclear waste were not removed, from generation to generation ... it would be here forever.'

The Taiwanese groups understand the conception of duty in different way. They regard nuclear waste issues as a social problem, since the majority of Taiwanese people have benefited from the process that creates nuclear waste, such as nuclear electricity, the products of nuclear technology and medical application. The Taiwanese group reflects the sense of shared duty. As one man states: 'Everybody should take responsibility for the nuclear waste problem.' The idea implies that people in Taiwan have the common responsibility for monitoring of nuclear waste management no matter whether the nuclear waste repository is on Orchid Island or Taiwan Island.

The Taiwanese groups' idea of shared responsibility provides relevance to the 'nuclear guardianship ethic' developed in the American context to guide the management of nuclear materials. The nuclear guardianship ethic asserts that each

generation should take responsible care of nuclear waste and people must acquire an ability to keep the nuclear material in view, because responsibility for them is easily denied when nuclear materials are hidden from view (Sullivan, 1998: 260). However, the nuclear guardianship ethic seems to conflict with the idea held by some of the Yami. The Yami fisherman and housewife groups consider that the present tribesmen have responsibilities for the life of those Yami who yet to come, and recognize the Yami as stewards of Orchid Island, so they reject nuclear waste on their homeland. If nuclear waste was removed from Orchid Island to another island or remote areas of Taiwan, some of the Yami might not recognize the tribe' responsibility for nuclear waste because it is seen as Taipower or the authority's problem. Some Yami would reinterpret the nuclear guardianship ethic in terms of Taiwanese people's responsibility instead of the common responsibility of the present generation. Some Yami fishermen, housewives and professional participants appear to solely focus on their duty of stewardship of Orchid Island.

Rights to life

The concepts of justice have implicit reference to rights, needs and desert regarding the discussion of environmental problems (Almond, 1995: 4). Following the legacies of the enlightenment tradition, Locke argues that individuals have certain rights in virtue of simply being human, not of political or economic status. For Locke, natural law is a test of the justice of actual (positive) laws of states, and the conception of rights to life, liberty and property eventually led to the flowering of the contemporary notion of human rights (Almond, 1995: 10). Traditionally human rights concerns focus on liberty and welfare. By 1972, the United Nations Conference on the Human Environment declared as a first principle: 'the fundamental right to freedom,

equality, and adequate conditions of life, in an environment of quality that permits a life of dignity and well-being.' Then it is proposed in the Brundtland report in 1987: 'All human begins have the fundamental right to an environment adequate for their health and well-being.' Many expansive environmental rights have been proclaimed in some national constitutions since the declaration. The aspects of environmental concerns depends on how 'health and well-being' are constructed, which includes pollution, waste disposal and toxic contamination as well as the quality of life in aesthetic, cultural and spiritual terms (Hayward, 2000).

Hayward (1994: 145) points out that the right to an adequate environment faces radical critique and two lines of objection. One is ecological constraints and neo-Malthusian objections that the pursuit of the full range of human rights would be ecologically unsustainable and producing scarcity. The second objection is that if humans have fundamental rights, then other beings might have some claims of rights too. Instead, Hayward (1994: 168-172) argues that a reconstructed conception of rights is compatible with ecological considerations. Rights are seen as to some extent conditional on the corresponding recognition of certain responsibility. He attempts to reconceptualise the 'persons' who are the bears of rights and follows Benton's (1993) point that humans are 'necessarily embodied, and are also to be conceptualized as "individuals-in-relationship" both to other persons (and living beings) and to ecological conditions through the medium of (highly variable) cultural forms.' Hayward's contextualizing persons refers to contextualizing their rights and seeks to relate rights to responsibility. As he puts it,

> Human rights can be correlated with human responsibilities—responsibilities between humans, and also responsibilities regarding non-human beings and the environment—so that the aims of social justice are actually consistent with and promote ecological sensitivity (Hayward, 1994: 130).

Environmental justice has been framed in terms of rights in the Yami and Taiwanese professional groups. It reflects the significance of the concepts of human rights and the link between rights and duties in the Taiwanese context. The Chinese began to adopt the Western concepts of human rights in the early twentieth-century. According to Woo (1980: 118), Dr. Sun Yat-sen who established the republic government in China in 1911 declared the 'Three Principles of the People' that reflected the combination of the old ideal of universal harmony and equality and the Western concept of the individual person. Woo (1980) argues that the concepts of universal harmony and duty in Chinese philosophy provide bases for human rights, which is different from the individualist roots of natural law doctrine in the West. These Chinese ethical concepts are seen to offer a metaphysical foundation for human rights, which do not alter 'the basic conception of rights and duties as derived from the nature of human life' (Rosenbaum, 1980: xii). Three Principles of the People (nationalism, civil rights, and people's livelihood) remains explicitly part of the platform of the KMT Party and in the anthem and Constitution of Taiwan.

The Taiwanese groups recognize the life free from pollution as fundamental human rights. Their notion of rights reveals the importance of responsibility for protection the environment from destruction and respect for others' rights. As one Taiwanese professional participant puts it: 'I think *huan jing zheng yi* [environmental justice] means to keep *huan jing* [the environment] clean, and to avoid producing pollution. To fight for one's own deserved rights.'

One Yami professional group also understands environmental justice in terms of rights to life. Some Yami professional participants regard a clean environment as their fundamental rights, and view the Yami anti-nuclear waste movement as striving for a healthy environment. As one Yami professional states: 'Several days ago, newspaper

and magazines reported top ten Taiwanese human rights [*ren chiu*] violations,[48] and Orchid Island's anti-nuclear campaign is also included in the list. Taiwan has not emphasized on this aspect. It will be disadvantageous to Taiwan's international image if the Taiwanese mainstream society does not emphasis on this. International organization would come to care about us.' Another participant echoes: 'We clearly see that Taiwan exist discrimination... choose the tribe to live with nuclear waste.' It shows that the non-governmental organizations (NGOs) and mass media appear to have played an important role, directly or indirectly, in shaping the different ways the Yami or Taiwanese people see the nuclear waste disputes. It shows the possible role of the NGOs or environmental groups to act as a mediator or facilitator of dialogue between the Yami and Taiwanese people (see Chapter 7).

Environmental rights claims are one of the crucial elements of environmental justice movement. However, the values of rights might be in conflict and need to be balanced, such as property rights versus equality rights or environmental rights (Penna and Campbell, 1998: 22). The Principles of Environmental Justice ratified at the First National People of Color Environmental Leadership Summit assert rights 'to be free from ecological destruction', fundamental right to clean air, water, land and food, and right to a safe and health work environment (Taylor, 2000: 539). For Harvey (1996: 400), the environmental justice movement that incorporates the demand of both negative and positive rights has internal contradictions. As he writes, 'the right to be free of ecological destruction is posed so strongly as a negative right that it appears to preclude the positive right to transform the earth in ways conductive to the well-being

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[48] The Taiwan Association for Human Rights cited 10 incidents in the news over the year 2002 and asked President Chen Shui-bian to improve as he vowed to turn Taiwan into a human-rights-oriented country. The government's storing of nuclear waste on Orchid Island, despite the objection of local aboriginal residents listed on the list. Taipei Times, 03/12/02. Available at http: //www.taipeitimes.com/News/taiwan/archieves/2002/12/03/185717 (last accessed 10/11/03).

of the poor, the marginalized, and the oppressed'. It also contains positive rights of all people to 'political, cultural, and environmental self-determination'.

Some Taiwanese participants recognize this contradiction, and emphasize compensation has great help for the welfare of those Yami elders, children' education and local economy. However, many of the Yami participants do not consider that the Yami anti-nuclear waste or environmental justice movement has internal contradictions or regard it as a problem. For example, the Yami fisherman and housewife groups focus on the negative right to be free from nuclear risks, and emphasize that the tribe could not give up protesting against nuclear waste for the huge amounts of compensation or job opportunity (see Chapter 4). It shows that the tremendous adverse impacts or threat posed by the nuclear waste repository, and the continuation of the tribe and tradition are some Yami participants' main concerns, and the contradictions articulated by Harvey are not so blatant. Instead, the Taiwanese participants' concerns about the Yami's economic survival and well-being reflect the complexity of environmental justice.

Utilitarianism

The utilitarian viewpoint developed by Jeremy Bentham (1994) is based on the principle of cost versus benefit, and suggests that one should chose the act that will brings the greatest amount of benefits, at the least cost to all parties involved. John Stuart Mill (1962) also puts emphasis on the basic criterion of morality that maximizes the total amount of happiness or social utility. Utilitarian ideas are also to be found in the Chinese philosophical tradition. Mo Tzu (479-381 BC), an early critic of Confucius, argues that there is too much emphasis on duty and too little on love in the Confucian teaching. Mo Tzu advocated a kind of utilitarianism, called *Mutual*

Profitableness: 'Righteousness is that which yields profit ... Mutual love produces mutual profit ... Common good arises from loving and profiting others ... God must like to see men loving and benefiting one another.' Mo Tzu advocated equal concern for everyone rather than any sort of individualistic pursuit of profit. Like utilitarianism, he considers morality as a task producing the greatest good for the greatest number.[49] Mo Tzu's ideas are still an important reference for political debate in Taiwanese culture. Such utilitarian considerations have become more significant in the contemporary society, with its rapid economic development.

The majority of the Taiwanese participants in the focus groups hold utilitarian perspectives on the conception of environmental justice. They regard people on Taiwan Island and Orchid Island as a whole, and argue that the siting decision needs to consider the greatest amount of good to the greatest number. For the Taiwanese groups, nuclear waste repository at the remote place with low population density and suitable geographic environment could minimize the possible risk (see Chapter 4). The utility principle requires the equal consideration of interests or happiness of each person in the calculation of consequences. However, Shrader-Frechette (1991: 113-4) argues that such utilitarian reasoning to justify the siting decision is incapable of dealing with the complexity of issues of justice because it does not address problems of fairness in the distribution of goods and 'bads'. With Shrader-Frechette, residents in small rural communities that host nuclear waste facilities and bear the disproportionate burdens probably consider the utilitarian principle unacceptable. Can Taipower justify dumping nuclear waste on Orchid Island by reference to the differences of geography conditions and density of population? The Yami might claim

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[49] The 'six schools' of Chinese Philosophy. Available at
http://www.china-sd.net/eng/qiluculture/confucius/relative-six.htm (last accessed 25/07/04).

that the Taipower's criterion is based on social status that involves bullying the ethnic minority.

In Yearley's (1995: 468-9) discussion on public disputes over environmental knowledge, it is argued that appeals to universal safety standards or safety procedures may actually be insensitive to local conditions and legitimate unjust outcomes. He provides the example of sheep farmers in Cumbria, northwest England, whose land was contaminated by radioactive fallout from the 1986 Chernobyl accident (cf. Wynne, 1996). Although the farmers received the scientific reassurances that the polluting cesium would quickly pass from the food chain, official scientists still measured high levels of contamination years after these predictions and the farmers were still unable to sell their stock. He argues that the assumptions about consistent caesium mobility disadvantaged Cumbrian farmers.

The case of public controversy describes above and the competing knowledge and values between the Yami and Taiwanese groups (see Chapter 4) reveal that it would be problematic to justify dumping nuclear waste at specific places by simply appealing to scientific standards. One crucial critique of utilitarianism is that it would lead to the sacrifice of some people's rights to the good of the many (Hudson, 2001: 112). The principle of utility alone could not do much good in solving problems of social and environmental conflicts, and the benefits of the minority.

Fairness

Distributive equity or equality of treatment does not mean that everyone ought to receive the same or identical treatment (Wigley and Shrader-Frechette, 1995: 137). As Shrader-Frechette (2002: 26) puts it, 'genuinely equal treatment might require that treatment for all individuals not be the same, so as to take account of some

individuals' higher *merit*, their deserving *compensation*, their special *needs*, or society's need to offer them an incentive for desirable actions'. She argues that it requires justifying unequal treatment by reference to relevant differences and justifying equal treatment by reference to relevant similarities to meet the requirements of justice. However, the distributive element of environmental justice discourses discussed in Chapter 2 shows that there are various notions and perspective of distributive justice.

The idea of fairness has been found in both the Yami Taipower employee group and Taiwanese groups' understanding of environmental justice. As discussed in Chapter 4, the Yami fisherman and housewife groups regard it bullying the ethnic minority to dump nuclear waste on Orchid Island. The Yami Taipower employee group recognizes a link between unfair distribution of risk and the factor of ethnicity:

Mod Have you heard about the term environment justice? What does it mean to you?

M1 Yes, I have. It means the majority oppresses the minority. Bullying the weak. I think that I hear it from international media.

M2 I think so. Then... why it [nuclear waste] has not dumped in the office of the president? (The Yami Taipower employees, group 7)

Similarly, some Taiwanese professional participants understand environmental justice in terms of *gong ping* [fairness]. It is considered *bu gong ping* [unfair] that the minority or people in poor town and impoverished country have no choice but to suffer disproportionately environmental destruction and costs. As one Taiwanese professional puts it: 'It involves the problem of *gong ping* [fairness]. Why build the nuclear waste repository, why not set it up at other places?' Another participant puts it: 'I think it refers to the phenomena that nuclear waste was stored in the poor town that

one cannot help but to accept it. As to this situation, it is just like a very poor country. Orchid Island is also like this.'

A few Taiwanese participants regard it as fair to remove the nuclear waste repository from Orchid Island, as one professional puts it: 'It is better to regain the original *huan jing* [the environment]. Return the land to local people.' However, other Taiwanese participants regard compensation as the best solution to cope with the potential environmental degradation caused by the nuclear waste repository or as a means to redress distributive inequity or costs. As discussed in Chapter 4, some Yami participants do not regard compensation as a means to achieve fairness or making the decision of dumping nuclear waste on Orchid Island legitimate. Environmental justice that simply focuses on distributive equity could not resolve conflict of siting.

Participatory democracy

The roots of the theory of participatory democracy dated back to the writings of philosophers such as Jean-Jacques Rousseau and John Stuart Mill. In Rousseau's (1968) *Social contract*, he advocates the participation of each citizen in political decision-making that is an essential way to protect individuals' interests and ensure good government. Rousseau suggests that the experience of the participation process would enables collective decisions, laws or policies to be more likely accepted by the individual. He also sees the experience of participation as increasing individual citizens' feeling of belonging in their community (Pateman, 1970: 24-27). Mill (1962) expands Rousseau's arguments about participation into a full theory of a modern political social system. He argues that the citizen should participate in decision-making not only in national affairs but also at local level, where 'the real educative

effect of participation occurs', and where 'the issues dealt with directly affect the individual and his everyday life' (Pateman, 1970: 31).

The Yami fisherman and housewife groups understand environmental justice in terms of the access to political decision-making processes and democratic procedures. Their idea provides relevance to the argument made by Hunold and Young (1998: 86) that participation in the decision process of siting risky facilities can make such situations more ethically legitimate (see Chapter 2 and 5). The Yami fisherman and housewife groups regard dumping nuclear waste on Orchid Island as a violation of environmental justice, and criticisms on the policy procedures and decision outcomes are significant. As one housewife puts it:

F1   They [Taipower] directly took nuclear waste to put Orchid Island, such a beautiful place. It destroyed *huan jing* [environment] and did not get our consent. At that time, we did not know whether it [the nuclear waste repository] was good or not. The Head of the Island Administration was illiterate, so nuclear waste came here in this way. This is not on the standpoint of *huan jing zheng yi* [environment justice].
(The Yami fishermen and housewives, group 2)

For a few Taiwanese participants, the nuclear waste controversy involves the problem of the procedural dimension rather than substantial injustice, which relates to their risk perceptions of the repository that it does not cause significant adverse harm or impacts on Orchid Island and the Yami have got reasonable compensation (see Chapter 4). It is considered that the defects of the decision-making procedure had provided a basis for subsequent conflicts. As one Taiwanese professional puts it: 'The repository is originally not a problem, but they [the Yami] have the feeling of being cheated. They themselves know about this.'

The decision made in 1980s by the past authoritarian government to set up an interim nuclear waste repository on Orchid island face criticism. The Yami fisherman

and housewife group regards the decision to dump nuclear waste on Orchid Island as an environmental injustice because the Yami are forced to live with disproportionate nuclear burdens and lacking participation in the policy-making process. This idea corresponds to the concern of 'the path-of least resistance nature of locational choices within economies' articulated by environmental justice activists that certain minority community's disproportionate share of environmental bads involves intentional result (Portney, 1994; Agyeman et al., 2003: 6). For some Taiwanese participants, a democratic procedure could bring legitimacy and increase public acceptance. The Yami fisherman and housewife group tends to regard democratic procedures and participation as necessary to prevent unjust distribution, which involves recognition struggles as well (see Chapter 5 and 7).

Social morality

Social morality concerns how people ought to relate to each other in a society. Morality can be a source of social harmony because social arrangement, social norms and cultural practices embody ways for people to relate to each other with fairness and respect. On the other hand, people make judgments on injustices and inequalities embedded in the social system, and conflicts arise mainly when people have not adequately acquired the morality of the culture (Turiel, 2002: 2-3). The Yami teenage student groups understand environmental justice in terms of social morality. Their idea of environmental justice contains the broad moral codes one should conform in the Yami society or on Orchid Island. The Yami teenage participants learn the moral codes through the education by the family and the process of socialization in the tribe, which has shaped their judgment on right and wrong action. One Yami teenage group views environmental justice as antithetical to 'environmental evil.' It is worth noting that the

Yami teenage participants tend to focus on various social behavior of moral deviation (e.g. destroying the environment, throwing garbage, disrespect for others) that is seen as blameworthy rather than a right conduct or goodness. It might be associated with their traditional concerns about 'evil ghosts' and taboos in the Yami tribe that disregarding moral norms would bring misfortune or bad consequences.

The Yami teenage groups connect the perceived injustices of dumping nuclear waste on Orchid Island with the behaviour of throwing garbage carelessly or doing harm to the environment that disobeyed the moral norm in the Yami society. The reactions in different societies or cultural settings to offenders against the moral codes that one should comfort may reflect different extent of punishment, ranging from mild verbally disapproval to drastic excommunication (Sachchidananda, 1981: 210). The Yami teenage participants express a strong antipathy against the conduct that violate social codes on Orchid Island, including condemnation (e.g. 'It is not moral'; 'Bad guys'; 'This behavior has no conscience') and the requirement for solving the problem (e.g. 'If someone was destroying *huanjing* [environment], we should ask him not do it'; 'Let's put the garbage back to one's house').

In Read's (1967) study of morality of the Gahuku-Gama in the Eastern Highlands of New Guinea, one of distinct characteristics of the Gahuku-Gama is their unconcern with and their unwilling to judge conduct that does not affect individuals or members of particular groups. The moral rules of the Gahuku-Gama tend to be 'unsystematized-judgments which refer to specific situations rather than to any explicit ideology of right and wrong as such' (p. 229). There appears to be a similar attitude among the Yami tribe. Some of the Yami might have never left Orchid Island, and the situations in which the Yami individuals are not involved would not interest the Yami. For example, once I invited several Yami children to take a picture with me near the sea,

but they said that the adults would not allow them to take photos because of their 'fear of ghosts' making trouble for them.' The Yami's breaches of the taboo or rules would be judged as wrong in the tribe, but it did not bother the Yami when I took pictures with my Taiwanese friend. The Yami understand their duties in terms of one's role and capacity. It is considered that one should do the best to keep a good environment according to his ability. The Yami teenage groups' understanding of environmental justice reflects the nature of the Yami morality that concern with the relations among the tribesmen, the situations in which the tribe or individuals are involved, and those conduct or events that would affect the tribesmen and their particular ways of life.

To summarize this whole section, it showed the multiple understanding of environmental justice. The Yami tend to look at environmental justice in terms of the need to eliminate injustice. Environmental injustices include those who pollute the environment, do not love the environment, impinging others' rights to life, the minority suffering disproportionately environmental burdens, the lack of participation in policy making processes that leads to unjust outcomes, and the deeds that violate social morality and are seen as environmental evil. Thus environmental justice is to address these injustices and stop those who destroy the environment. The Yami recognized the tribe's responsibility to preserve the environment, expressed consideration for future Yami generations and the continuity of the tribe, a good life that contains recognition of various ways of life, traditions and narratives, and claimed for access to decision-making processes and political rights to reject unequal treatment. From the perspective of the Taiwanese groups, environmental justice involves shared responsibility for nuclear waste management, the deserved right to a clean environment, fair treatment, respect for local people and nature.

The Yami and Taiwanese groups have some compatibility about the conception of environmental justice such as preserving the environment from pollution and the idea of duty, and both of them recognize the importance of participatory democracy. However, there are competing interpretations surrounding the disputes over nuclear waste management. I will return to this in the next chapter.

The barriers to a coalition for environmental justice and the emerging networking of indigenous peoples

The environmental justice movement shows that the grassroots groups confronting contamination in their communities perceive themselves as unjustly exposed to environmental risks, and their experiences are transmitted to those in similar circumstances by an emerging network of national and international organizations. The First National People of Color Environmental Leadership Summit held in Washington, D. C. in 1991 was the prime event of the environmental justice movement that diverse groups with many issues devising a plan to transform the society (Hofrichter, 1993: 237). However, the barriers to build alliance among a variety of groups with difference have largely been ignored in the literature of environmental justice. This section discusses the barriers to form similar alliances for environmental justice between the Yami and Taiwanese groups, and the emerging networking of indigenous peoples or cultural groups.

The barriers to a coalition between the Yami and Taiwanese people

The Yami's skepticism and the feeling of marginalization

The Yami professional groups recognize that both the Yami and the residents of three nuclear power plants suffer disproportionately from nuclear or radiation risks, as

one woman states: 'Their voices [those Taiwanese residents of the nuclear power plants] are similar to ours. We are not for our own business, but thinking for the next generation. This is our duty.' A sense of marginalization is significant in some Yami groups, as one female professional puts it: 'We are just like the children who are being ignored by parents. We are like the children being bullied outside, and the state does not comfort us.' The Yami groups seem to acknowledge the similar circumstances that both the tribe and some Taiwanese residents are exposed to greater risks. However, one of the barriers to form the national network is that the Yami's distrust in authority and Taipower might have extended to the Taiwanese community. The Yami tend to call Taiwanese people the Han (*Han ren*) to distinguish them from the tribe. The extract below from the Yami professional group reflects the Yami suspicious attitude toward the Taiwanese people:

M1   I feel that the ethnic minority group does not know what tricks that *Han ren* [the Han] would play. We are here alone. The way the authority or Taipower communicate with local [Taiwanese] residents of the nuclear power plants is different from the way they [Taipower] talk to us. There is certain kind of understanding between them [Taipower and the Taiwanese residents], such as their notions and the positions.
(The Yami professionals, group 3)

Moreover, some of the Yami participants regard their economic condition, capacity and social status as even worse than the situation of those residents who claim for environmental justice in the American context. One Yami fisherman recognizes the Yami as the ethnic minority and the most powerless among the twelve aboriginal tribes in Taiwan. Another housewife feels that dumping nuclear waste on Orchid Island involved depreciation – 'the civilized people bullying the illiterates'. The Yami Taipower employee group points out the tribesmen's problem of making a living in order to show that the tribe have got worse situations than other community:

F1   We are low-income, but the living cost is high.

M1   What low-income! We have no income. 80 percents live without incomes. Everyone could go fishing, doing the same thing. Who will buy the fish from you?

F2   In the past, everyone was content with the self-sufficient life.

M2   Anyway, you won't be hungry on Orchid Island.

   (The Yami Taipower employees, group 7)

The insular attitude

A parochial attitude is significant in some Yami focus groups, as some Yami participants take the removal of nuclear waste from Orchid Island as the priority and advocate shipping back nuclear waste to Taiwan (e.g. the three nuclear power plants). The Yami's position about a coalition for a clean environment seems passive. They hope that outsiders can support and speak for the Yami, but do not express their concerns about the Taiwanese community's situation or what the Yami can do for other communities. As one housewife says: 'As long as removing the nuclear waste repository, which is our ultimate goal. We could not let Orchid Island become the littering island.'

As discussed in Chapter 4, the Taiwanese professional groups generally consider that the Yami's opposition to the nuclear waste repository has been driven by their exclusionary culture. The extract below from the Taiwanese professional group reflects the gap between the Yami tribesmen and Taiwanese migrants, and the Yami's parochial attitude toward outsiders:

M1   They [The Yami] exclude from outside notions... Some children do not identify with you and ask you go away, saying 'I want our tribesmen to teach.' Very exclusionary...

M2   I feel hard to blend with them [the Yami]... kind of stubborn.

M3   They are a little bit spoiled. I hear they [the Yami] say, 'why do you catch our fish'? Just like an 'Orchid Island nation'. But in many aspects, they rely heavily on the government... very contradictory.

   (The Taiwanese professionals, group 9)

Competing views on the Yami anti-nuclear waste movement

The Yami groups tend to identify the Yami anti-nuclear movement as environmental justice movement, while the Taiwanese groups suspect the Yami's campaign against the nuclear waste repository in terms of self-interest. Environmental justice movement was introduced to focus group participants in the final part of discussions by writing on the board that environmental justice activists point out: a) low-income or the minority communities often bear greater environmental risks; b) live in a healthy environment is part of basic rights and no community should live with the pollutant. In general, most participants showed their interest in the claims of environmental justice movement, and some housewives even took a note during the discussion. Most of the Yami groups echo to the claims of environmental justice and looked at Orchid Island's situation from this perspective.

The Yami professional and teenage student groups tend to stress on the livable environment for future generations, which is seen to be the core element of the environmental justice movement and the basis for the Yami's opposition to nuclear waste as well. Instead, for most of the Taiwanese participants, the Yami's anti-nuclear movement does not exactly correspond to the claims of environmental justice. They claim that the Yami public in fact confront the peer pressure, and the protest against nuclear waste is the work of political agitators. As one points out:

M1   I feel the protest is not rational, and they [the Yami] do not sit down to think about it. The Taipower employees have worked at the repository for a long time, and nothing happens to them. When everybody [the tribesmen] gets together to join in the protest, one will feel embarrassed if he doesn't go, otherwise one will be scolded.
      (The Taiwanese professionals, group 8)

Furthermore, the Taiwanese participants consider that the Yami anti-nuclear waste movement involves political consideration, self-interests and the attempt to get benefits or celebrity. Some local politicians are seen to exaggerate the negative impacts of nuclear waste and try to let the public know that they are concerns about the Yami, but they do not actually live on Orchid Island. There is considerable skepticism in the extract below:

M1 Nuclear waste has become a political tool. Over-exaggerated and everybody [the Yami] will feel that you are a traitor if you are not with others. Sometimes they are united because of the common enemy, but it also happens that each one does things in his own way. The politicians' lead or join the protest was broadcasted, which can increase the exposure to the audience [popularity]. It involves political interest.

M2 Protest is for asking money [more compensation], and will get more or less response. (The Taiwanese professionals, group 8)

The above discussion has showed the gap between the Yami and Taiwanese groups and the lack of mutual understanding and communication between them. The Yami groups expressed their doubt whether the Taiwanese people would sincerely treat the tribesmen as partners in dealing with environmental problems, while the Taiwanese participants seem to view the Yami as insular. I will address issues about how to bridge the gap between groups with differences in Chapter 7.

The emerging networking of indigenous peoples

The Alliance of Taiwan Aborigines founded in 1984 has brought various indigenous tribes together to demand political rights and cultural status (see Chapter 1). According to two non-Yami aboriginal participants on Orchid Island, the Yami generally have friendlier attitudes towards other aborigines because the Yami identify them as members of the ethnic minority with similar historical experience. It shows

that it might facilitate the formation of alliance between the Yami, other Austronesian peoples in Taiwan and other countries, or the Taiwanese people for environmental justice if there are some similarities among them, such as social experiences and common concerns about environmental problems.

The Yami's tie with inhabitants on Batan Islands, Philippines, is significant. Recently, the Yami and the inhabitants on Batan Islands have mutual visits and recognized the blood ties and the common language and culture. Being part of the Austronesian language region,[50] the Government has attached great importance to promoting substantive relations with other Austronesian peoples and tried to build a framework for solid exchanges and cooperation.[51] But the policy tends to focus on the preservation of Austronesian cultures and protection of Austronesian peoples' rights to development and prosperity, which actually involves the political consideration that provides new opportunity to promote diplomacy. The emergence of the environmental justice network would need to extend the focus of cultural preservation into the concerns of environmental issues.

In 1990s, the Yami anti-nuclear waste movement won the support from some social groups such as Taiwan Environmental Protection Union, Taiwan Association for Human Rights, Association for the Promotion for Aborigine Human Rights, and Homemaker's Union, which stopped further shipment of nuclear waste from the power stations to Orchid Island in 1997. However, nowadays the removal of nuclear waste from Orchid Island is under the condition that a permanent site for nuclear

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[50] The area inhabited by Austronesian peoples stretch from Madagascar in the west to Easter Island in the east, and from aborigines of Taiwan in the north to New Zealand in the south. See the Austronesian Peoples of Taiwan. Available at http://www.tacp.gov.tw/english/intro/fmintro.htm (last accessed 05/06/04).

[51] The assembly of Austronesian Leaders opened in Taipei on 9 December 2002 with about 100 delegates from 13 countries participating. It is hoped that the Taiwanese people will recognize the issues of mutual concern with other Austronesian peoples, and build a communications platform with them for exchange activities. Furthermore, the government has promoted its 'go south' foreign investment policy. Taipei Times, 10/12/02.

waste storage is found and completed. The Taiwanese people and environmental groups would not support the Yami's demand for shipping it back to Taiwan immediately without a cautious evaluation. Although there are some divisions between the Yami and Taiwanese groups and barriers to a coalition discussed previously, it has potential for building networking for environmental justice if people could recognize those different environmental values and views held by other groups for their common concerns about the environment and the well-being of future generations. Instead of the simply focus on the date of nuclear waste removal, the Yami and Taiwanese need to extend their concerns to a non-nuclear Taiwan, the need to stop the source of nuclear waste, and other broader environmental issues (see Chapter 7).

Conclusion

The Yami and Taiwanese perspectives on environmental justice have been associated with the broader worldviews, sociocultural and life experiences, and positions, and so on. The elderly Yami fisherman and housewife groups tend to focus on the good life and traditions, their responsibility for future generation and stewards of Orchid Island, and the past decision-making processes that led to the disproportionate nuclear risks. The Yami professional groups put emphasis on the notion of rights to life and respect for the environment. The conception of environmental justice made by the Yami Taipower employee group is that the minority communities experience unfair treatment and bullying. The Yami teenage students regard environmental justice in terms of social morality, and those conduct that would affect the tribesmen or damage their particular ways of life is blameworthy. The Taiwanese groups provide a more comprehensive idea of environmental justice,

including responsibility, rights, respect, disputes over fairness and utility, and democratic procedures. The research findings corresponds to Harvey's (1996: 372) argument that discourses about environmental justice 'not simply as a philosophical and ethical debate, but rather in terms of the "environmental" conditions (beliefs, institutions, social material practices, and relations, forms of political-economic power) that give rise to such a discourse and become internalized within it'.

These various interpretations of environmental justice reflect a broader environmental justice discourse that contains diverse focuses and ground. Some elements or arguments offered by the Yami and Taiwanese groups are compatible but the Yami's rights-based notion of environmental justice would be in conflict with some Taiwanese participants' utilitarian arguments that it is right to provide reasonable compensation and is inevitable to let remote community host a nuclear waste repository. Some Yami's idea of stewardship that their responsibility is limited in the tribe and Orchid Island is incompatible with a sense of shared responsibility articulated by the Taiwanese group. It raises the question as to how to appeal to justice.

Lyotard's (1984: 66) point that justice is 'a multiplicity of finite meta-arguments', locally, temporary and changeable, not a singular conception or consensus. According to Harvey (1992), theories of social justice involve cultural, linguistic or discourse relativism, and discourses about social justice hide power relations. He argues that to make appeals to justice entails 'that there are some universally agreed upon norms as to what we do or ought to mean by the concept of social justice (Harvey, 1996: 341). For Harvey, competing discourses about justice cannot be disassociated from discourses about positionality in society. In his view, it is impossible to make objective appeals to justice. As he puts it:

There can be no universal conception of justice to which we can appeal as a normative concept to evaluate some event. ...There are only particular, competing, fragmented, and heterogeneous conceptions of and discourses about justice which arise out of the particular situations of those involved (Harvey, 1992: 342).

Instead, Young (1998: 40) argue that we do not need to refuse to make appeals to justice. For her, Harvey is affected by certain postmodern critiques of Enlightenment universalism and he 'confuses a critique of the effort to apply formal principles to everyone in the same way with rejection of objective appeals to justice'. She argues that Harvey wrongly reinforces the opposition between universality and particularity, and emphasizes that 'we should not interpret our current theoretical and political situation as a choice between universal and particular, class unity and the recognition of social difference, but rather as a challenge to move beyond these oppositions' (Young, 1998: 37).

Young (1990) tries to construct radical and transformative critiques of injustice and appeals to justice. Young provides the heterogeneity of experience of injustice and five faces of oppression, including exploitation, marginalization, powerlessness, cultural imperialism and violence (see Chapter 2). She argues that the discourse of justice and coalition is consistent with a politics of difference. As she writes:

Appeals to justice and claims of injustice are not a result, they do not reflect an agreement; they are rather the starting point of a certain kind of *debate*. To invoke the language of justice and injustice is to make a *claim*, a claim that we together have obligations of certain sorts to one another. ... In the course of debated about what the obligations of justice require, people will often formulate principles to support their claims, but this does not mean we must agree on principles before we can debate about policy or judgement. We go back and forth between the particular and the general (Young, 1998: 40).

I think Young is right to say that claims of justice do not presuppose agreement on principles of justice. For example, the Yami anti-nuclear waste movement reflects claims for environmental justice, which is not on the basis of the mutual agreement on the conception of justice within the tribe.

Harvey (1996: 360) suggests that we need to find the similarities among us that bring our differences together in order to forge a class politics when he discusses appeals to justice and norms of solidarity. Young (1998: 39-40) do not entirely disagree with Harvey's claim, but regards it better to frame political solidarity or to rest appeals to justice on recognition that we are objectively together rather than being similar despite the fact that similarities often exist. Togetherness means that persons have prima facie obligations of respect and care toward one another in the web of interconnection. She argues that people's structurally different positions in the division of labor and varying cultural needs could contribute to multiple social perspectives and a more comprehensive account of the problems and to formulate a just program (pp. 41-2). Although some of the Yami might prefer to have the program from their own position alone rather than multiple social perspectives on nuclear waste issues surrounding the existing facts of injustice, the discourse on environmental justice is openness to various interpretations of the term and difference (see Chapter 7).

Chapter 7 Environmental pragmatism and intercultural dialogue over environmental justice

It is necessary to rethink of the multiple conceptions of environmental justice articulated by the Yami and Taiwanese groups that have been provided in Chapter 6. The Yami and Taiwanese groups' understanding of environmental justice have some compatibility such as preserving the environment from pollution and the idea of responsibility, but there are competing interpretations surrounding the disputes over nuclear waste management. For example, the idea of the good life held by the Yami fisherman and housewife groups, and a few Yami professional participants' rights-based notion, are in conflict with some Taiwanese professionals' utilitarian position. Some Yami participants' understanding of the responsibility for future generations in terms of the tribe and the stewards of Orchid Island are inconsistent with the sense of shared responsibility held by the Taiwanese migrants.

This chapter focuses on the question of how we can respond to differing ways of understanding environmental justice, deal with the divisions within a multicultural society, and formulate environmental policy regarding nuclear waste dilemmas. It begins with the review of environmental pragmatism and shows how environmental pragmatism has applied to a wide range of environmental controversies and value conflicts. Then, I illustrate the possibilities of environmental pragmatism providing an effective method for defusing conflicts between groups with difference. Drawing on Dewey's notion of the reconstruction of community and Norton's (1996) multiple-scalar model, the second section argues for the reconstruction of a broader community, members of which could acknowledge their commonality and work together for the resolution of common problems.

The third section argues that environmental pragmatism might help fashion converged ends among the Yami, the Taiwanese and other Taiwan aboriginal environmental communities, including stopping the source of nuclear waste, agreed responsibility for nuclear waste management and a democratic procedure for permanent siting decision, etc. Environmental pragmatism then could offer as many different reasons for these different ends as possible so as to appeal to as broad a community as possible to achieve the given end. The attempt to bring the Yami, the Taiwanese and other aboriginal environmental communities that might share common goal already into dialogue could be seen as a starting point to narrow the gulf between the Yami, the Taiwanese and other cultural groups.

This chapter then proceeds to argue that Habermas's discourse ethics is in need of correction because it overemphasizes consensus, and is not sensitive to the problems in a complex and pluralistic society and the relation between humans and nature. It discusses issues of group boundaries and recognition of difference from a pragmatic perspective, and argues for a pragmatic approach to intercultural dialogue that could help to enhance mutual understanding and recognition. It concludes by arguing for notions of environmental justice in a pluralistic and pragmatic fashion, and that intercultural dialogue between a variety of environmental communities might facilitate intercultural alliance-building for dealing with nuclear waste problems.

Environmental pragmatism and nuclear waste dilemmas

'Applied' philosophy and 'practical' philosophy

A growing number of environmental ethicists have tried to rethink the problem of what practical effect environmental ethics has had on the formation of environmental policy. In order to explore the different roles of philosophers in the process of public

policy formation, Norton (1995: 126) distinguishes two kinds of nontheoretical philosophy: 'applied' philosophy and 'practical' philosophy. Applied philosophy refers to the application of general, abstract and universal principles to real cases or policies. Agreement on a policy option will emerge only if the general principle as essential premises in an argument is acceptable by all disputants. Instead, practical philosophy does not assume that theoretical principles will be developed independent of the policy process or prior to practice. Practical philosophy is more problem-oriented because principles are ultimately generated from practice rather than establishing and applying theory to real situation.

The applied philosophy method comes along with moral monism that seeks universal principles. According to Stone (1987: 111-24), moral monism seeks 'to produce, and to defend against all rivals, a single coherent and complete set of principles capable of governing all moral quandaries.' Moral monism also assumes that this is a determinate goal – the favoured framework is 'to yield for each quandary one right answer.' From the monistic viewpoint, the goal of environmental ethics is to determine which single moral principle should guide environmental actions. The ethical work of Callicott (1990, 1995) that focuses on refining theories of why nature has some kind of non-instrumental or intrinsic value represents a striving for foundational principles. Regan (1981) disagrees with Callicott on what nonanthropocentric principle to apply, but both take the position that environmental ethics must embrace some form of nonanthropocentrism and monism.

Norton (1995: 132) rejects monism and regards it as 'philosophies of centralization and homogenization.' Castle (1996: 244) also maintains that no one philosophical system is sufficiently broad or flexible to encompass the diversity of viewpoints. It is not likely to be fruitful to attempt to discover an all-encompassing

environmental ethic (Stone, 1987). Minteer (1998) argues that the pure philosophical absolutes sought by some environmental ethicists would lead them to reject the everyday moral resources present within human culture. The effort to maintain a monistic position tends to overlook the consideration of specific social contexts and unique culture.

Contrary to a monistic approach, moral pluralism as a practical philosophy allows a form of agreement on real cases in which agreement on the general formulation of moral principles is not essential. Practical philosophy seeks the integration of multiple values and tries to reduce the distance between disputants by finding a general policy direction that can achieve greater consensus. It searches for workable solutions of specific problems or a range of actions that are morally permissible or acceptable to a wide range of worldviews (Norton, 1995: 129-33).

Practical philosophy, based on the pragmatic tradition, tends to be more effective in environmental policy formation and defusing conflicts within a pluralistic society than the foundational approach and monism. For example, Castle (1996) criticizes the imposition of any single particular strategy for guiding natural resource management and formulating environmental policy, such as cost-benefit analysis. He rejects any monistic environmental philosophy because of the fluidity and variety of human relationships with nature, and argues for a approach that is 'pluralist in philosophy and pragmatic in application.' Schiappa (1996) also defends a pragmatic and political perspective on the definition of wetland that is central to a policy debate. He argues that environmental activists, scientists and regulators are able to offer a pragmatic definition of wetland which serves particular social interests.

The multiple conceptions of environmental justice articulated by the Yami and Taiwanese groups in the context of nuclear waste controversies provide support for a

pluralistic account of environmental values rather than a monistic philosophical stance. A foundational approach to ethics that requires the application of single theory functionally equivalent to truth fails to take a variety of conflicting moral insights into account and limit alternatives to nuclear waste management. For example, Rawls's (1971: 136-7) earlier work *A Theory of Justice* implies such a universal conception of justice. According to his idea of the original position, people should imagine they do not know certain kinds of particular facts behind a 'veil of ignorance', including one's place in society, ability, class position, fortune in the distribution of natural assets, and so on. Each person would choose ethical principles that were considered to be fair to everyone because everyone does not know who one will be and what ones individual interests are. Rawls's model of justice is too abstract. Communitarians have attacked the form of liberalism exemplified by Rawls's work, arguing that it fails to grasp the embodied nature of the people in a particular time and context (see Sandel, 1982; MacIntyre, 1981). As Hampton (2003: 220) argues, the reasoning in Rawls's original position is 'disconnected from social traditions, operating in a vacuum and hence unconnected to the real concerns, assumptions, goals, aspirations, and belief systems that real, socially embedded people actually have.' The view held by Rawls is less sensitive to the Yami's particular idea of good life and the stewardship of Orchid Island. The Yami, especially the elderly Yami, probably could not imagine not being a Yami living on Orchid Island. In contrast, pragmatism represents an engagement with the actual problems in the specific historical and social context.

The perspective of environmental pragmatism

Environmental pragmatism draws upon the pragmatist philosophical and political tradition in American thought, advocating a serious inquiry into the practical merits of

moral pluralism (Light and Katz, 1996). The American philosophical school, represented mainly in the late nineteenth and early twentieth-century writings of Charles Peirce, William James and John Dewey is marked most notably by its anti-foundational character that denies the existence of 'a priori or self-justifying "truths" and moral absolutes' (Minteer and Manning, 1999: 193). Environmental pragmatism focuses on practical solutions to environmental problems. For Light (1996), there is much that we do agree on that has not been put into environmental policy or communicated to the public effectively. From the metaphilosophical perspective, what environmental pragmatists agree on is that the truth of any particular theoretical framework is not always fundamental for specific environmental problems and the 'appropriateness of any one theory in a particular case is contingent on historical, cultural, social and resource conditions.' Environmental pragmatism chooses the approach that is most appropriate for purposes of environmental practice regardless of its theoretical origin (Light, 1996: 172, 177).

Environmental pragmatism is the open-ended inquiry into the specific real-life problems of humans' relationship with the environment (Light and Katz, 1996: 2). Hickman (1996) argues that Dewey's work on pragmatic naturalism locates itself in the thick of current debates surrounding the relations of human beings to non-human nature. For Dewey, nature does not exist independently from human beings nor represent a self-contained machine or a self-directed transcendent being. Instead, nature is 'a multifaceted construct that has been slowly and laboriously built up over thousands of years of human history by means of various tools of inquiry, including the arts, religion, magic, hunting, manufacture and experimental science' (Hickman, 1996: 53). Norton's (1991: 200) pragmatism argues for 'a new, philosophical, culturally, and political viable worldview that sees humans as integrated into larger

systems and that values objects as parts of their human, cultural, biotic, and abiotic contexts', which shows a sensitivity to changing environmental values across time, space and culture (Minteer and Manning, 1999: 194). Minteer (1998: 346) also argues for a contextual and experience-centred environmental ethics that 'has the resources to lead toward a better view of the full richness of human moral sentiments tied to the natural world.' He regards environmental values as part of our shared cultural traditions, and respect for nature as not having the certainty of moral foundations.

Pragmatism is seen as an effective method for resolving controversial issues and public policy disputes. Weston (1992) develops a pragmatic approach to problems such as abortion, animal rights and the environment, arguing that pragmatism's doubts about the theoretical turn should apply to the discussion of justice. He argues for integrating values and reconstruction methods to transform ethical problems into something more promising and tractable. For Weston (1992), Walzer's (1983) work on justice represents such an integrative engagement. His general approach to justice is that the account of justice must remain closer to the beliefs and understandings of ordinary people than is usually the case with abstract theories of justice. Walzer aims 'to "locate" justice values, to show how various societies have worked them out over time. The project requires following them in the direction of complexity and historical particularity rather than simplicity and abstraction' (Weston, 1992: 154). Weston (1992) argues that inquiring into the social and historical roots of ethical problems could open the possibility of transformation 'the' problem into something more tractable. He borrows the term 'reconstructive' from Dewey and argues for a reconstructive view: the 'meaning' or symbolic value of certain acts must be weighted together when deciding on the appropriate policies to adopt (p. 5).

Furthermore, environmental pragmatism operates along with the value of democracy and public deliberation. Dewey's (1988: 227) emphasis on the role of consultation, conference, persuasion, discussion and formation of public opinion for democracy provides a basis of those arguments for ethical pluralism and public deliberation. Walzer (1981) points out that the universal absolutes of foundationalist philosophy runs counter to the working of the democratic community, and argues for the pluralistic, historically contingent dimensions of public life. In Walzer's later work, he argues that it is far better to conceive of moral theory-building and social criticism as coming from within communities, cultural traditions and public life in general rather than striving for an independent ground. He calls for greater attention to telling a story, though there is no definitive and best story (Walzer, 1988; Minteer and Manning, 1999: 200). Minteer and Manning (1999: 200-2) make a similar argument that monistic approaches to environmental ethics leave little room for public discussion and critical evaluation of arguments for the intrinsic value of nonhuman nature based upon a single set of coherent moral principles, which makes them undemocratic. They emphasize that we need to respect the moral languages spoken by those who care about the health of the environment, even when they sound different from our own.

The claims of environmental pragmatists' discussed above were controversial when first made, and are not accepted on all sides of environmental theorists. For example, Callicott (2002: 3) argues that theoretical environmental philosophy has had and is having a practical and profound effect on environmental policy, despite environmental pragmatists' critique that environmental philosophy theorizes to little practical effect. He claims that the academic debate about 'intrinsic value in nature has begun to penetrate and reshape the discourse of environmental activists and

environmental agency personnel.' Callicott (2002) further disagrees with Norton's (1991) 'convergence hypothesis' (which identifies that there is the apparent agreement on most ends of environmental policy among anthropocentrism and non-anthropocentrism, even if they do not agree on the philosophical foundations for those ends or policy), and argues that weak anthropocentrism cannot justify the preservation of all species. He defends foundationalism in environmental philosophy by arguing that: 'Anti-foundationalists, such as Minteer and Bryan G. Norton, ironically pose an insidious threat to democratic discussion and debate of environmental values, because they themselves posit, but do not frankly acknowledge, foundational beliefs' (1999: 499).

While there are some criticisms to be made of environmental pragmatist analyses of other approaches to environmental ethics, I argue that environmental pragmatism is more defensible. Callicott argues that his work on environmental ethics could influence either environmental activists or the public policy process, but the fact is that such approach to environmental ethics focuses on engagement in debates among environmental ethicists over issues like the moral foundations for an intrinsic value of nature rather than try to resolve policy controversies. In concrete practical situations, there often seems to be no single right answer or answer which is best. Considering the multiple values held by the Yami and Taiwanese groups in the nuclear waste disputes, abstract moral norms provided by environmental ethicists like Callicott do not appear to resolve the practical problems faced by the local residents on Orchid Island. Instead of asking environmental ethicists to give up their debates on the nonanthropocentric natural value, environmental pragmatism endorses a pluralism that acknowledges the possible necessity of sometimes using the anthropocentric description of the value of nature to help support a morally responsible policy (Light,

2004). Furthermore, the pragmatists admit that our understandings and concepts are fallible, and experience can at any time reveal our beliefs or the meaning of an idea as false. Environmental pragmatism recognizes the importance of many diverse individuals, experiences and concepts coming together to offer insights into actual problems in the public sphere (Parker, 1996). Hence, environmental pragmatism is more sensitive to different conception of the good in the specific context and tends to have a positive effect on practice.

A growing number of research has demonstrated the validity of a pragmatic approach to specific environmental and social issues, including the cases of policymaking for leaded gasoline (Thomson, 2003), forest resource management (Castle, 1996), animal welfare and hunting (Light, 2004). Environmental pragmatism, representing a democratic respect for diverse public values and ethical positions regarding the environment, is relevant to the participatory dimension of environmental justice as well as the issue of recognition of difference discussed in Chapter 2, which helps to complement distributive issues. The following sections discuss whether environmental pragmatism could provide a method for addressing nuclear waste problems and the tension between the Yami, the Taiwanese and other non-Yami aboriginal tribes who have different ethical positions.

The reconstruction of a broader community: a sense of commonality

Recognizing that the application of foundational ethical theories such as utilitarianism, libertarianism and egalitarianism to the real situation tends to freeze the debate and leads disputants to insist upon an interpretation of problems that conforms to an underlying philosophical position, Thompson (1996) argues for a solution to

environmental policy based on James' idea of pragmatic necessity and Dewey's notion of the reconstruction of community. Pragmatic necessity implies that any analysis of environmental disputes needs to facilitate the formation of a broader community and action to address problems. Reconstruction that follows deconstruction is to build shared ideas and a sense of community (p. 202). Thompson (1996) suggests that it would be useful for each group in a dispute to deconstruct the images of those disputants, followed by the reconstruction of community. As he puts it, 'it would be useful for each group to see themselves as part of the same community, at odds on a given issue, perhaps, but drawing from common moral traditions and headed towards a common future. Such a community might find political solutions that reciprocate each interest, even while they may demand compromise on the case at hand' (p. 205).

Norton (1995: 138-9) regards environmental problems as problems of scale and argues that solving environmental problems needs cooperation at an unprecedented level. For Norton, Hardin's (1968) analogy 'the tragedy of the commons' is applicable to virtually every environmental problem, that 'individual motivated human behaviour must be shaped by a commitment, communally forged, to limit the scale of human alternation of nature.' It reflects the crucial role of scale in environmental problems and the need of community-oriented values to guide environmental policy rather than the individual-scale decisions motivated by short-term profits. The 1987 report of the World Common on Environment and development, *Our Common Future*, also suggests that many environmental issues such as global warming, the loss of biodiversity and acid rain are problems of commons: 'We all depend on one biosphere for sustaining our lives. Yet each community, each country, strives for survival and prosperity with little regard for its impact on others...' It argues for the need to deal

with the environmental commons problems cooperatively. As discussed in Chapter 1, nuclear waste problems also have such spill-over impacts across communities and generations that we need to rethink the normative ideas of the commons and the relations between self and other.

Although the Yami and other Taiwanese aboriginal tribes, the Taiwanese public, environmental groups, Taipower and governmental officials conceive nuclear waste problem differently, it could help to defuse the confrontation or tension of ethnic relations if disputants see themselves as members of a broader community. However, the Yami, especially the elderly fishermen and housewives, conceive their world from a given local perspective and tend to associate their personal identity with the Yami tribe. The similar perception and experience of nuclear waste risks have produced an increased sense of solidarity among the tribe as some Yami fisherman and housewife, and Yami professionals tend to regard the Yami anti-nuclear waste movement as a symbol of tribal solidarity. As one Yami professional participants puts it, 'owing to nuclear waste... nuclear waste let us, the tribesmen, be with one heart.' The significant 'we' emerged among the Yami in contrast with the 'otherness' or 'they' represented by Taipower, governmental officials, and those who are not seen as with the Yami position.

We need to reconceptualise identity in the way which goes beyond the polarization of identity of individual or community. It would be better to see identity and relationship as something much more complex and cross both within and outside the ethnic groups. I argue that members of the Yami tribe should not be regarded as homogenous. Communities are rarely so homogenous that all their members identify with a single conception of the common good. People who share characteristics of one identity usually have multiple identities (O'Neill, 2000: 176). According to Mead's

(1934) pragmatic ideas for understanding human interaction, identity is produced through the dialectics between self and society in the ongoing process of social reconstruction. The interactionist view of identity goes beyond the tendency of liberals to put 'the self as prior to society' and of communitarians to see 'the self as being constituted by society', and sets the individual and the society in dialectical tension and sees each as shaping the other. In this view, we are part of the social and natural environments and engaging ourselves with them. During the process of this engagement, 'we are transformed through our interactions both with others and with nature', and 'are also able to transform the societies and environments we inhabit' (Evanoff, 2002: 106-7). Therefore, the Yami's constructed norms of identity are able to change. Transportation and technological advances have led to increased communication and mobility. While the Taiwanese people come to Orchid Island for various purposes, many tribesmen have more opportunities to explore other worlds. Nowadays some Yami teenagers have access to the Internet, communicating with others, exchanging information and building friendships. Also, there are ones with whom the Yami have special relations outside of the tribe's borders, such as their children or grandchild studying or working on Taiwan Island, and their Taiwanese and Austronesian friends in the wider world. The Yami could realize that the tribe is not in isolation from but in relation to others in the society. I will address issues about group difference and boundaries in the later section on intercultural dialogue over environmental justice.

Norton (1995) argues for a biogeographical approach to human values that puts emphasis on a sense of place and on a bottom-up model for the formation of environmental values. He recognizes the important role of the ecological context in giving meaning to local adaptations and in forming the perceptual viewpoint and

values of any particular culture, and argues that 'an environmental ethic for the protection of nature's diversity must respect local variance' (pp. 140-1). Instead of regarding the NIMBY (not in my back yard) syndrome as irrational or selfish local opposition to pollution (e.g. Sjoberg and Drottz-Sjoberg, 2001), Norton maintains that local values are present in the NIMBY syndrome and suggests that environmental ethicists can seek ways to inform NIMBYism and integrate it into regional concerns (p. 142).

Some Taiwanese professionals have recognized the problem of NIMBYism (Chapter 4), and the Taiwanese participants and a few Yami professionals tend to see the Yami anti-nuclear waste campaign as irrational (Chapter 6). As one Taiwanese professional puts it, 'anti-nuclear waste is just like opposition to the construction of incinerator and the fourth nuclear power plant. No one wants it to be in their backyard.' Kemp (1990) argues that those who object to the local dumping of radioactive waste are motivated by a range of environmental concerns and values. We can have a more positive view on NIMBYism by recognising that local opposition may reflect residents' concern for genuine negative impacts on the community that are ignored by the experts and decision-makers, and may promote the cooperative search for a broader range of more suitable sites (Kraft and Clary, 1991: 301). I think Norton (1995:143) is right that environmental policy should be formulated from the bottom up rather than imposed by centralized authority because of the importance of sense of place in the formation of environmental values. We need to transform the NIMBY conflicts into problem-solving cooperation that is engaged with broader concerns.

Furthermore, Norton (1996) proposes a pluralistic theory of integrated values that takes into consideration both the local and the spatiotemporal features of human interactions with nature. A successful integrative ethic for the environment should be

able 'to sort out the many and various values that humans derive from their environment and to associate these variables with real dynamic processes unfolding on the various levels and scales of the physical and ecological context of our activities' (pp. 126-7). He proposes a tri-scalar model to illuminate the dynamics that support human values, with each of the scales of human interaction with nature corresponding to a temporally distinct *policy* horizon (p. 128):

1. Locally developed values that express the preferences of individuals, given the establishes limits and "truths" – laws, physical laws, governments laws, and market conditions, for example – within which individual transactions take place;
2. A longer and larger community-oriented scale on which we hope to protect and contribute to our community which might be taken to include the entire *ecological* community;
3. A global scale with essentially indefinite time scales on which humans express a hope that their own species, even beyond current cultures, will survive and thrive.

The multi-scalar phenomenology of environmental concerns shows that a full-blow sense of place necessarily includes an integration of the individual and local into a larger, longer-term, and community-based system of culture and nature (Daly and Cobb, 1989). Norton (1996: 128) emphasizes the importance of the second scale, that members of the community feel concern about the culture's interaction with the ecological context in which values are formulated and acted upon. The second scale is the multiple-generational level on which human individuals across generations recognize the close relationship with other species that share their habitat.

Norton's multi-scalar relationship of individual, community and global scales indicates that individuals must view themselves and act as members of a community of plants and animals as well as the human social community. He asks us to imagine, conceptually, that the surface of the earth is represented as a variety of points or individual perspectives, and each individual perspective is tied by a cultural history to

a human community and by a natural history to the land community. Although humans perceive environmental values from a local perspective and from the present point of time, those values are also be shaped within a larger space in which there can be impacts on the larger and global physical systems, which imposes a constraint on future choices (pp. 129-30). Norton argues that 'the human community will only survive to further evolve and adapt if we learn to achieve individual welfare and justice in the present in ways that are less disruptive of the process, evolving on larger spatio-temporal scales, essential to human and ecological communities' (p. 133). The implication of Norton's multi-scalar model is to seek environmental policy or actions that will have positive or non-negative impacts on multiple scales of human concern, including the individual welfare level, the community level and on the emerging values of the global community (p. 131).

Drawing on Norton's model, the Yami as well as Taiwanese people need to realize that their actions have impacts on multiple dynamics and multiple scales, and that rapid changes of ecological context can gradually impact the large, intergenerational scale, and traditional values and practices as well. A good example is the Mohawk peoples of Akwesasne, a Native American community, who know that 'a healthy ecosystem is not only the key to a healthy community, but is essential for survival', and that their fight for cleanup and restoration of Mother Earth means restoration of Mohawk culture (Tarbell and Arguette, 2000: 108). In fact, the Yami and Taiwanese society are closely interconnected with each other. A new form of community could emerge on the basis of communal concerns and common visions, rather than solidarity exclusively in terms of the ethnic and cultural identities or institutional structure. The Yami, the Taiwanese and other Taiwanese aborigines would regard themselves as members of the larger social community in which nature and

future generations are inseparable from human concerns and moral life. Members of the larger community should not be highly parochial or self-interested, but realize that they could do something for their common concerns. The Taiwanese groups reflect the idea of shared responsibility. Although some Yami fisherman, housewife and professional participants appear to consider that Taipower and the Government alone have the duty to deal with nuclear waste problem, there are other Yami participants who express their concerns about the tribal interaction with the ecological context. For example, one Yami housewife claims that removing nuclear waste from Orchid Island cannot guarantee a clean environment, arguing for the need of tribal self-reflection that some tribesmen's behavior might damage the environment as well. Also, a few Yami professional participants recognize a clean environment as a basic human right and claim that nuclear waste should be stored on an unpeopled island (see Chapter 4 and 6). Since some Yami participants admit everybody's rights to a clean environment and their duty of stewardship of Orchid Island, the Yami perspective and life experiences could actually contribute to effective monitoring of the repository.

Following Dewey, Weston (1992: 60) argues that if we consider changing our practices and institutions rather than taking problems as fixed and inevitable, then the problematic situations would not arise in such an intractable way. He calls this kind of change 'social reconstruction'. Pragmatists suggest that one must consider the actual, specific historical and individual context to begin to reconstruct a problem. We need to ask how and why these issues have emerged as problematic and what sorts of institutions a particular society ought to develop that might prevent such problematic situations from occurring in the first place (Weston, 1992: 144, 156). Inspired by Weston's social reconstruction and integrative approach, we need to rethink whether the nuclear option is necessary. The following extract from the Yami professional and

teenage student groups reflect that they are not just concerned about the impacts of the nuclear waste repository on Orchid Island but also issues of eliminating the use of nuclear power:

M1 When we discuss the nuclear waste problem, we need to think about a non-nuclear Taiwan. Surely, everybody does not hope nuclear energy remain in Taiwan. There are many ways to generate electricity, like wind power, tide. Now high technology has developed, why must we have nuclear energy to produce nuclear waste?

F2 Yes, solar power also can be used.
(The Yami professionals, group 3)

M1 They [Taipower]are constructing the fourth nuclear power plant, aren't they? Where will they [Taipower] dump the nuclear waste?
(The Yami teenage students, group 5)

Some Yami participants realize the fact that the removal of nuclear waste from Orchid Island is not the only answer to nuclear waste dilemmas. They extend their focuses on tribal affairs (e.g. removing nuclear waste from Orchid Island, individual economic benefits) to concerns about sustainable energy and environmental problems within the larger social community. It opens the possibility of intercultural dialogue over their common concerns about the long-term health of the environment and human welfare.

The convergence among a variety of environmental communities

The attempts to make a convergence among environmentalists or organisations that could share goals for the future would provide the basis of the reconstruction of a larger community. In Norton's (1991) *Toward Unity Among Environmentalists*, he

challenges the suggestions that environmentalists hold no common ground, and argues that shared policy goals and objectives might characterize the unity of environmentalists. Following Norton's convergence hypothesis that anthropocentrists and nonanthropocentrists may be able to endorse a common policy direction, Light (2002: 562) argues there was more that was agreed upon among a wide variety of environmentalists concerning what they want to achieve. Gundersen (1995: 145) proposes a similar argument that 'the more ways there are to value something, the more likely people will *disagree* about *why* to value it and the more likely they will *agree* that it *ought* to be valued.' He gives us an example the fact that Schrader-Frechette (individualistic and anthropocentric) and Callicott (holistic and biocentric) would agree about the proposal banning economic development in wilderness areas, though for very different reasons. Schrader-Frechette would take the position that we are obliged to allow future generations a full range of choices regarding the use of wilderness areas. Callicott would argue that we have an obligation to preserve wilderness because it plays a significant role in preserving the integrity and beauty of the ecosystem. Environmental ethicists can share one conclusion despite disagreement about the imperatives based on their metaethical frameworks.

Light (2002, 2004) calls his approach 'methodological environmental pragmatism' to distinguish from the more historically oriented version of environmental pragmatism. Considering the issue of whether the work of environmental ethicists is useful to the public, Light (2002) argues that one task of the methodological pragmatists is to 'take those issues that the environmental community agrees upon, for whatever reasons, and communicate these issues to the lager public.' The role of the methodological pragmatists is necessarily philosophical and aims to come up with ethical grounds upon which environmental policies can be justified. As

to the question of who counts as the environmental community or an environmentalist, Light (2002: 564) maintains that someone counts as an environmentalist if they claim to be an environmentalist.

Environmental pragmatism might provide an effective method for reducing the divergence between environmental communities with diverse ethical values in the nuclear waste controversy by seeking a practical environmental policy that has a wide philosophical base. It means that the Yami, the Taiwanese and other Taiwan aboriginal environmentalists could reach a agreement about what needs to be done which does not require agreement on reasons. First of all, the Yami environmental and social organisations such as the Orchid Island Anti-Nuclear self-help Association, the Orchid Islander Society in Taiwan and the Aboriginal Tribes Workshop could be seen as an environmental community. Those Yami fishermen and housewives who put emphasis on respect for the Yami's way of life, the Yami professionals who stress on the stewardship of Orchid Island and the Yami who are engaged in campaigns against nuclear waste could count as part of the Yami environmental community as well (see Chapter 4 and 6). The Taiwanese environmental community might include the Taiwanese anti-nuclear organisations, the Taiwanese professionals who put emphasis on the importance of respect for the environment, and so on. The larger public includes the Yami, the Taiwanese and other aboriginal tribes such as the Yami Taipower employees, teenage students, those Yami and Taiwanese people on Orchid Island who neither endorse or oppose the nuclear waste repository.

Environmental pragmatism could help to fashion the converged ends of the Yami and Taiwanese environmental communities and other aboriginal organisations. Numerous anti-nuclear environmental organisations have been founded in the last ten years and protest against the construction of a further nuclear power plant because of

the nuclear risks and current dilemmas of nuclear waste management. Some Taiwanese environmental and social organisations expressed their support for the Yami environmental and social organisations, and asked the government to monitor nuclear waste management and to undertake social reform toward justice.[52] The Yami and Taiwanese environmental communities could have a convergence of views on a non-nuclear Taiwan and have reason to be opposed to the sources of nuclear waste and to support doing something more effective about its disposal. Environmental pragmatism just claims that the Yami and Taiwanese environmental community could agree on ends without agreeing on ultimate values, or even ways of conceiving of the problem.

Those Paiwan[53] aborigines dwelling in Taitung have also formed the East Paiwan Tribe Anti-Nuclear Self-Help Association to express their opposition to nuclear waste and make the following claims:[54]

1. Taitung County is the last pure land in Taiwan without industrial pollution and the local officials should take the social responsibility to guard the land;

2. The Government and Taipower should make efforts on renewable energy, stopping the construction of the fourth nuclear power plant, gradually decommissioning the current three nuclear waste plants, and removing nuclear waste from Orchid Island to the location of the three closed power plants;

3. Taipower and the relevant government divisions should stop the actions that damage the environment and harm the aborigines;

4. The campaign will not stop until nuclear power plants have been decommissioned and the goal of a non-nuclear nation has been achieved.

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[52] United Daily News, 12/23/02.
[53] The Paiwan tribe lives in the mountains of the southern end of Taiwan, as well as the Taitung area.

It shows that the Paiwan aborigines and the Yami and Taiwanese environmental organisations agree on the ends of stopping the source of nuclear waste, effective nuclear waste disposal and a non-nuclear Taiwan, though they have different cultural traditions and frameworks of values. As to the disputes about whether nuclear waste should be removed from Orchid Island, the Paiwan aboriginal anti-nuclear activists tend to sympathize with the Yami circumstance and appeal to remove nuclear waste from Orchid Island. However, the majority of Taiwanese environmental or social organisations neither support the removal nor oppose such an appeal. For example, the Taiwan Association for Human Rights considers it a violation of human rights that the government neglects the Yami's objection to nuclear waste repository, which does not imply that the removal of nuclear waste is the only solution. The converged goal among the variety of environmental community would be the improvement in monitoring nuclear waste repository on Orchid Island, thought they might have different ideas of the issue where nuclear waste should go.

The Taiwanese environmental community could further agree on democratic deliberation and procedures concerning the issue of nuclear energy. The Taiwanese anti-nuclear community has the converged ends of keeping the increase of nuclear waste down, though they take different views on the disputes about the fourth nuclear power plant under construction. Some Taiwanese anti-nuclear activists oppose the construction of the fourth nuclear power plant, while other Taiwanese anti-nuclear activists think the priority is to decommission the old three nuclear waste plants rather than the stop of the fourth one because of the huge sink costs. Nuke-4 Referendum Initiative Association advocates building a nuclear-free nation and urges the government to hold a referendum on whether to continue construction of the fourth nuclear power plant. The demand to hold a referendum implies an acknowledgement

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[54] Eco-Society Viewer: Ayo. http://mx.nthu.edu.tw/~hycheng/ (last accessed 26 November 2003).

of the value of democracy and the aim to facilitate a rational energy policy debate and dialogue among different parties.

The Yami and other aboriginal environmentalists would also want deliberation and participation that could help the Taiwanese environmentalists understand the Yami and other aboriginal tribes better (see Chapter 5 and 6), and a variety of environmental communities could have reasons to agree on the democratic procedures concerning the use of nuclear energy and dilemmas of nuclear waste management. Environmental pragmatism then could offer as many different reasons for these different ends as possible so as to appeal to as broad a community as possible to achieve the given end, including stopping the source of nuclear waste, responsibility for nuclear waste disposal, and a democratic procedure for a permanent siting decision.

Pragmatism offers a method for arriving at a policy prescription rather than giving substantive solutions that comply with a pre-established model (Thompson, 1996: 187). Minteer and Manning (1999) argue for expanding and stimulating democratic deliberation and debate over environmental policy with appeals to multiple ethics for problem solving rather than a focus on an exclusive emphasis on monistic ethical prescriptivism. As they put it:

> For environmental policy debates to be fair and just, diverse moral claims must be accorded equal respect in democratic discourse. Of course, respect does not mean agreement, and the selection of 'appropriate' philosophical arguments is ultimately left to the procedures of free and open debate over policy alternatives. (Minteer and Manning, 1999: 206).

A pragmatic, pluralistic and democratic approach developed by Minteer and Manning provides the situation through which groups perceived as different could nevertheless interact.

The case of Orchid Island reveals the challenge of the plurality of voices, the conflicts and competing views on nuclear waste issues. For example, the Yami fisherman and housewife groups talk about 'evil ghosts' and regards nuclear waste as others' garbage, while the Taiwanese group and those Taipower representatives and employees tends to talk about scientific rationality and utilitarianism. The public meeting held on the Island Administration also showed the difficulty in bringing the Yami and Taiwanese public together to have a debate with each other (see Chapter 4, 5 and 6).

Looked at from a pragmatist perspective, there is more convergence between the Yami and Taiwanese environmental communities than their perceived difference between them. In reality, many of the Yami and Taiwanese people have shared concerns about a non-nuclear Taiwan and inseparable relation between human and nature. For example, the Yami Taipower employee participants indicate that people seem to regard them as pro-nuclear, but they put emphasis on their position against nuclear energy or nuclear waste. It would become easier for the environmental community or those who might share common goals already (e.g. preventing the increase of sources of nuclear waste, effective monitoring) to enter intercultural dialogue over environmental justice in order to find better ways dealing with nuclear waste dilemmas. Dialogue among a variety of environmental communities could be seen as the starting point of defusing ethnic tension and enhance mutual understanding between parties with differences.

Intercultural dialogue over environmental justice

A pragmatic approach to intercultural dialogue

As suggested in Chapter 2, environmental justice is wider than distributive issues of social justice and requires acknowledging and addressing group difference. In Lyotard's view, injustice is the attempt to inhibit dialogue about justice and it is repressive to impose fixed norms on a particular society without the participation of the people who are affected by adopting these norms (Lyotard and Thebaud, 1986: 66-7). Habermas's discourse ethics discussed in Chapter 2 reflects the attempt to move away from the idea of 'universally valid, substantive principles of justice' (White, 1991: 138). In Habermas's concept of the 'ideal speech situation', consensus as an ultimate and ongoing aim can be arrived by the use of better argument. Norms that can claim to be valid are those accepted by all participants as embodying common or general interests in a practical discourse (1990: 64-8). But Habermas's approach to communicative action is not sensitive to the real situations in a complex and pluralistic society (Dryzek, 2000: 24) and revision is needed.

Dryzek (2000: 170) argues that Habermas's ideal of consensus is unattainable and undesirable as people can have different reasons for agreement on a particular action. Habermas (1996) seems to recognize this problem and his later work *Between Facts and Norms* attempts to be more open to difference, which includes 'pragmatic discourse about what should be done in terms of translating consensus into binding decisions capable of implementation, and negotiations concerning what to do when values and interests irreducibly conflict' (Dryzek, 2000: 24-5). Intercultural dialogue does not need to seek unanimous agreement. As Antonio (1989: 743) puts it, 'pragmatist social interaction depends on the capacity to share attitudes and does not rely on value consensus; sympathetic understanding of the other does not require

agreement or homogeneity.' Following the perspective of pragmatism, intercultural

dialogue over environmental justice allows arriving at agreement on goals or actions

without necessarily reaching a shared set of reasons for these goals or actions or value

positions.

The definition of the term environmental justice causes tensions or conflicts over

the issue of cultural and ethnic boundaries among environmental justice activists in

the USA. Some environmental activists insist on the cross-cultural nature of

environmental injustices, while other minority activists regard the term as exclusively

devoted to the problems faced by communities of colour and argue the articulation of

issues of environmental justice should be left solely to the ethnic minority (Epstein,

1995: 7; 1997: 80-2). Hutchison (2003: 34-6) argues that borders based on territorial,

cultural, ethnic or religious categories as a production of socialization often restrict the

participation of 'outsiders' in discourse on issues that are of concern to them. Group

interaction or intercultural dialogue is undermined by dominant modes of thought, by

history and by context. Notions of justice or injustice need not to be bound to

particular groups as a result of their culture or ethnicity. Instead of the abolition of

differences among groups, Hutchison argues, pragmatism provides an alternative

framework that 'prompts flexibility and acceptance when thinking of those "outside"

our borders'. 'Consideration would be grounded in the realisation that we are one

humanity, yet that humanity also comprises many individuals with diverse interests

and values' (p. 36). Differences exist within the people or the society. However, the

pragmatists reject the kind of view which regards irreconcilable differences as more

important or more significant than similarities (Misak, 2002: 133). Environmental

justice issues and nuclear waste are not the problem faced only by the Yami or the

ethnic minority. We should not let all boundaries between the Yami and Taiwanese

groups become barriers to their interaction and dialogue on practical environmental issues.

Bullard (1995) argues that environmental justice could go beyond the problems of 'minority' populations because grassroots groups have grown to become 'the core of the multi-issue, multi-racial, and multi-regional environmental justice movement'. Schlosberg (1999: 192) emphasizes that the ethics at the basis of the environmental justice movement include 'a recognition of difference, a respect for diverse positions, and an attempt to develop a solidarity still based in that difference offer a place from which communication and dialogue about these tensions may begin.' It implies that differences in terms of race, culture or class should not act as constraints on discourses on environmental justice or the scope of the movement.

Relying on research conducted by social psychologists which shows that 'the boundaries of the moral community within which people are willing to apply principles of justice to fellow members are affected by perceptions of similarity and common identity', Miller (2002: 219) provides critique of radical differences between groups within the community because 'people who identify exclusively with their ethnic sub-groups as opposed to embracing a more inclusive identity alongside it are less willing to accept the authority of procedures that may be used to resolve disputes or allocate resources, and become more concerned about well or how badly they have fared personally in the outcome.' He suggests participants in the dialogue need to be more justice-driven:

> You must strike a fine balance between emphasizing what you have in common with other members of your audience, so as to win their sympathy and motivate them to see you as someone to whom justice is owned, and emphasizing the ways in which you are different, and which mean that you have special needs or suffer special disadvantages. (Miller, 2002: 220).

I think Miller is right that the dialectics between commonality and difference is important for the process of intercultural dialogue. Notions of environmental justice need to be understood in a more pluralist and pragmatic fashion in a multicultural society that is more open to others with difference, and does not demand unanimous agreement in the dialogic process as a basis for collective decision. Siegfried (1996: 275) makes a similar argument from a pragmatic feminist perspective that this method 'does not mean avoiding conflicts or denying differences.'

One example of a pragmatist ethics that makes persistent conflicts manageable is the dispute over the moral problems associated with introduced large herbivores in newly developed nature areas in the Netherlands (Klaver et al., 2002; see also Keulartz et al., 2004: 23-4). There is a polarized debate between animal protectionists and nature conservationists. While the majority of the animal protectionists see the released horses and cattle as domesticated animals to be cared for individuals, most ecologists tend to treat them as already wild. Klaver et al. (2002) introduce a pluralistic environmental ethics explicitly with the pragmatic intention to break up such dualisms and impasses. This new ethical notion is the principle of 'respect for potential wildness'. It concedes a capacity for wildness by emphasizing the *potential* aspect of wildness, and also acknowledges that de-domestication is a dynamic learning process with an uncertain outcome. It brings animal welfare ethicists and ecoethicists together by seeing the dispute over 'domestication status' of the animals as the question of 'less or more' rather than 'either-or'. Keulartz et al. (2004) also argue for the need to obtain an equal coexistence of different ethical vocabularies or common ground between the conflicting groups. They argue that seeking for common ground is a promising way to combine two crucial tenets of pragmatism: 'the candid acknowledgement of the inevitable plurality of moral vocabularies on one hand and

the commitment to work at finding solutions for the problems of human cooperation and cohabitation on the other' (pp. 24-5).

Efforts should be made to create a common-ground dialogue between the Yami, the Taiwanese and other aboriginal groups in nuclear waste disputes – that is, a dialogue which starts with shared goals and common concerns and is ended up agreeing on ways forward. As previously mentioned, the Yami and Taiwanese environmental communities have a convergence of views on a non-nuclear Taiwan and renewable energy, and have reason to support doing something more effective about nuclear waste management. There might be other consonances between groups that could bridge differences of views. One example is the disagreements within the tribe about the nuclear waste disputes and the Yami pastor could act as a mediator. As one Yami professional indicates, 'religion is the basis for concession and compromise, which could resolve conflicts. For example, when the opinions of Langdao [villagers] were in conflict with Dongqing [villagers], the preacher acted as a mediator and prayed, and the tribesmen became quiet.' It shows that religion or tradition could play an important role of facilitator to let the Yami or other people be more open mind, listening to or respecting competing views of the good life.

A pragmatic approach to intercultural dialogue might help the Yami and Taiwanese people realize a variety of different ways of thinking about environmental justice, and enhance mutual respect in nuclear waste management discussion. On the other hand, as Rescher argues, the validity of ideas should be tested through their efficacy in practice (1993: 192-3). A pragmatic approach to intercultural dialogue encompasses the recognition of group differences, and at the same time, it attempt to seek solutions that could best cope with the complex situation of nuclear waste dilemmas.

Tensions between environmental pragmatism and intercultural dialogue

In pluralistic societies, it is definitely difficult or impossible for communities that hold competing views of the good life and values to reach ethical consensus (Keulartz et al., 2004: 22). For Evanoff (2002), people's beliefs and environmental values are not inevitable or absolute. He argues that new values and norms can be created through the interactions between cultures and a dialogue process that enables us to best stand in the context of a changing world. According to MacIntyre (1988), no existing tradition implies a universal conception of justice and the coming together of communities with various traditions might open up new alternative possibilities and enlarge our views of justice. He outlines three stages of the process of developing a wider perspective and new concepts:

> ...a first in which the relevant beliefs, texts, and authorities have not yet been put in question; a second in which inadequacies of various types have been identified, but not yet remedied; and a third in which response to those inadequacies has resulted in a set of reformulations, reevaluations, and new formulations and evaluations designed to remedy inadequacies and overcome limitations (1998: 355).

MacIntyre regards it as the mark of an 'epistemological crisis' when inadequacies have been recognized in a tradition or the established belief. The solution to an epistemological crisis needs the reformation of new concepts and theoretical frameworks that meet three requirements. First, new concepts and new type of theory must furnish a solution to the inadequacies. Secondly, it must provide an explanation of reasons that the tradition was previously unable to deal with the problems. Thirdly, the new theoretical and conceptual structures must preserve a fundamental continuity with that tradition (1988: 362).

Evanoff (2002: 14) argues for a constructivist approach to intercultural ethics in which people with differing forms of knowledge and ethics might be able to reach a measure of agreement on the norms and principles to govern the relationships people have both with each other and with their natural environments. While recognizing critiques of Habermas's discourse ethics on the grounds that 'nature cannot enter into discourse' (Krebs, 1997: 269), Evanoff (2002, 124-5) develops a communicative approach to environmental ethics that is broader than the framework provided by Habermas. He argues that for 'an ethic to be socially and ecologically responsible it must consider the consequences which any norms that are intersubjectively agreed upon will have on both humans and nature.' Moverover, our values and attitudes toward nature are socially constructed and culturally variable, but social constructions need to be evaluated by the evolutionary and pragmatic criterion of how they enable humans to function in the world. Our socially constructed ideas and values can be challenged and reformulated in ways that are more adaptive to changing situations. Evanoff's constructivist position sees norms and principles as being actively 'produced' through the process of dialogue in which the participants are open to the differing perspective of others, acknowledge the limitations of their own particular perspectives, and change their initial positions as they learn from each other (pp. 57-8).

In order to produce creative new alternatives, Evanoff (2002: 165-71) further argues that intercultural dialogue must go beyond the argument that 'cultural differences must be respected' because it is not in itself a justification. Intercultural dialogue involves a radical critique of existing social arrangements and must engage in asking cultures to *justify* why they do things the way they do and to give persuasive reasons why some alternatives might be better. He argues that the goal of dialogue is 'to critically reflect on all positions, discovering what is best (and worst) in each and

attempting to integrate the best of each in a new synthetic whole' rather than harmonizing existing positions in a vaguely worded compromise that all groups find acceptable (p. 198).

However, there would be tensions between certain aspects of environmental pragmatism and some features of Evanoff's model of intercultural dialogue. Norton (1991) emphasizes the ways in which environmental activists adopt worldviews just long enough to make certain kinds of arguments for their favoured environmental policy in terms that will speak to a wider constituency. One manifestation of a more general environmental pragmatist trait is the focus on 'changing policies' rather than changing people's minds or values. This would contrast with Evanoff's emphasis on the need for intercultural dialogue to go beyond respect for differences to the radical critique of existing social arrangements, the demand that cultures justify why they do what they do, and the provision of reasons to back views that some given alternatives might be better than others.

I argue that we do not need to ask the participants with differences to justify current beliefs and the particular world views in dialogue. It would be better to get back to the deconstruction-reconstruction motifs to be found in Dewey's pragmatism, as emphasized by Thompson, and taken up by Weston discussed in the previous section. Multiple ethical viewpoints in the disputes must embrace the task of constructing a broader community and be able to address environmental conflicts. Instead of getting people to engage in debates on which ethical principles are the right ones, intercultural dialogue over environmental justice would focus on practical and policy issues. Evanoff's requirement that both the Yami and Taiwanese groups have to justify their different particular world views and social arrangement in dialogue involve the problem of producing moralistic policy gridlock or precluding political

action. The main concerns should be the converged ends or policies among different groups rather than the conflicting values or diverse languages used by the Yami and Taiwanese groups, such as evil ghosts, others' garbage, scientific standards, and utility.

On the other hand, Evanoff's (2002: 29) argument about effective dialogue between cultures raises the question as to whether engagement in intercultural dialogue may cause the problem of disembedding of traditions. It would require the Yami to learn to transcend their particular 'situatedness' and take into account the perspectives of the Taiwanese or other indigenous groups. Evanoff's approach involves some danger that critical critique and justification of particular world views in intercultural dialogue might 'destroy indigenous culture integrity' or impose our particular values on other culture.

Since historically contingent communications have existed between cultures on Orchid Island, it is unlikely that the Yami tribe can return to a traditional tribal life in which the Yami live in complete isolation from outside world. My research shows that the Yami culture is not a single voice, and there are continuing internal tensions in conception of the good *within* the tribe (see Chapter 3, 4, 5 and 6). In fact, different communities or groups themselves already have conversations. There are internal conversations going on in the Yami culture as well as in the Taiwanese community. For example, there are on-going conversations about environmental issues between the Christian Yami and non-Christian Yami in their daily life. Instead of treating it as as a problem of loss of cultural identity, I found that it is the Yami participants who have integrated Christianity into their spiritual life tend to emphasize the uniqueness of the Yami tribe. They actually represent Christianity with Yami characteristics (e.g. Satan cf. evil ghosts; local church and worship with Yami style). Hence, intercultural dialogue over environmental justice is not about bringing two homogenous sets of

beliefs together and engaging in a new conversation. Instead of bringing non-conversation into conservation, it is to bring plural conversations together and get people to take others seriously and appreciate the diversity of belief systems.

Following Mendus's (1989) discussions of *Toleration and the Limits of Liberalism*, Phillips (1993: 157, 161) argues for 'more dynamic sense of differences as changing.' She rightly suggests that difference 'challenges dominant groups to reassess their own values and perspective, but also challenges subordinate and excluded groups to go beyond sectarian loyalties.' This does not mean that difference can be denied, but seeks for 'a wider sense of belonging.' Although the idea held by the Yami and Taiwanese environmental communities might on the surface appear incommensurable, intercultural dialogue among a variety of environmental communities could help enhance mutual understanding and recognition of difference, and has a possibility of building bridges between the Yami, the Taiwanese and other aborigines in nuclear waste disputes.

I have argued for the necessity of a pragmatic approach to intercultural dialogue in the complex situation of nuclear waste dilemmas. However, I am not in this thesis going to go into a lot of detail about how the processes of intercultural dialogue might be designed and conducted. This is another project (see chapter 8 about future research). There is an on-going conversation about different ways in which dialogue about nuclear waste management should be conducted in Britain. For example, there are studies examining different forms of dialogue process, such as national stakeholder fora, citizens' juries, discussion groups and web consultation (see Hunt and Simmons, 2001; Hunt and Thompson, 2002; McKenzie and Hunt, 2001). According to the Department of Health of Taiwan, the first citizen panel on a 'Western model' will be held in mid September 2004, in order to solicit public

opinions on surrogate motherhood before revising the law on reproduction.[55] More

forms of dialogue processes still need to be formed and conducted to get the public to

have conversation on nuclear waste management and other controversial issues, which

will offer important guidance for policy-making bodies.

The potential intercultural and problem-solving alliance building

Schlosberg (1999: 190) argues that the notion of unity, different from uniformity,

has been reawakened in environmental justice. The environmental justice movement

reflects the development of solidarity across both similarities and differences, and the

ability to form networks with those like and unlike. A common-ground dialogue

between diverse environmentalists and environmental organisations in the pursuit of

environmental justice might remove the barriers to cross-cultural alliances dealing

with environmental problems. The alliance that includes the Yami, the Taiwanese and

other aboriginal environmentalists could engage with environmental justice problems

of mutual concerns, which cross cultural boundaries, and the unique problems

confronting particular communities as well. It could make efforts on seeking a more

effect solution for nuclear waste disputes, and at the same time working on broader

social and political concerns.

Intercultural alliances for environmental justice could function to bridge the gaps

between the Yami and Taiwanese communities regarding nuclear waste disputes that

involve in ethnic conflicts and a history of domination as the Yami indicated (see

Chapter 1, 4 and 5). Alliance-building among a variety of environmentalists with

cultural differences will make possible further dialogue between the Yami and

Taiwanese communities and working together on the issues of nuclear waste. The

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[55] Taipei Times, 09/08/04, page 2. Available at
http://www.taipeitimes.com/News/taiwan/archives/2004/08/09/2003198026 (last accessed 09/09/04).

alliance will need to engage in further communication with the larger public, which includes dialogue within the community (e.g. the Yami environmentalists with the Yami public; the Taiwanese environmentalists with the Taiwanese public) and intercultural dialogue (e.g. the Taiwanese environmentalists with the Yami public; the Yami environmentalists with the Taiwanese public). The process of dialogue attempts to let the general public identify the common goals of a non-nuclear Taiwan and stopping the source of nuclear waste shared by the alliance and agreed practical actions.

Intercultural alliances could help diverse local communities speak to each other and recognize the complexity of people's values. As discussed in Chapter 6, the Yami groups tend to look at environmental justice in terms of the need to eliminate injustice and stop those who destroy the environment. The dialogue between the Taiwanese environmentalists and the Yami public might help the Yami realize that the tribe could benefit from joining the alliance with other environmental communities to address those injustices together. Intercultural alliances would try to involve people in decisions affecting them. It could help the Yami, other aboriginal tribes and Taiwanese local residents realize the need to demonstrate that their concerns are not purely parochial, but worthy of being taken seriously by environmental activists and the Government. Local residents will understand that they need to transcend their narrow domains and expand their concerns to other local communities and tribes. As to the problem of public distrust and one-way communication between Taipower and the public in the public meeting (Chapter 5), an intercultural alliance could play the role as the monitor of Taipower and the government, and as a bridge between community residents and Taipower.

Conclusion

This chapter has discussed how environmental pragmatism and intercultural dialogue might provide a method for dealing with the ethnic tension and multiple understanding of environmental justice surrounding nuclear waste disputes in a pluralistic society. The reconstruction of a broader community based on pragmatism could help the Yami, the Taiwanese and other aboriginal tribesmen transcend their group-specific identities to share some common ground or a broader common identify that we are also the members of wider society, despite cultural differences between them. I also put stress on the importance of sense of place and a bottom-up approach in setting environmental policy.

The Yami, the Taiwanese and other aboriginal environmental communities that have the shared common goal of lowering the production of nuclear waste, the elimination of the use of nuclear energy and a non-nuclear Taiwan could work together to address nuclear waste dilemmas through the process of intercultural dialogue. A common-ground dialogue helps conflicting groups recognize the plurality of ethical positions and promote the formulation of better policy in a complex situation. It has a possibility of facilitating intercultural alliance building. The networking of environmental community could strengthen the commitment to the process of intercultural dialogue, and to form mutually advantageous partnerships to develop responsible policies for nuclear waste problems that heads toward a collective decision with plural claims of environmental justice.

Chapter 8 Conclusion

The thesis aims to explore the implications of nuclear waste disputes in the cultural context of Orchid Island for research on the discourses of environmental risk and environmental justice, and what environmental justice can do for the divide between the Yami aborigines and Taiwanese people and in the formation of nuclear waste policy. This chapter begins with a recapitulation of the main findings of the fieldwork as they shed important light on the conceptions of environmental justice. The second section provides policy implications for nuclear waste management. Thirdly, it argues that engaging in intercultural dialogue over environmental justice and alliance building could bring the transformation of Yami and Taiwanese individuals, community and government institutions. Finally, the limitations of the scope of this thesis are discussed along with suggestions for future research.

The implication for environmental justice discourses

As discussed in Chapter 2, much work on the conception of environmental justice has focused exclusively on theories of distributional justice (e.g. Dobson, 1998, 1999, 2003; Low and Gleeson, 1998; Wenz, 1988). Claims for justice made by environmental justice activists are more than just distribution of environmental goods and burdens. Issues of recognition of difference and democratic participation are also crucial elements of the environmental justice movement. Attempts to expand the discourse of justice theory to political participation and issues of recognition have been made (e.g. Young, 1990; Fraser, 1997, 1999; Honneth, 1992; Taylor, 1994). However, only a small number of environmental justice studies move beyond the distributive realm to encompass issues of recognition, cultural difference and democratic political processes (e.g. Schlosberg, 1999, 2003, 2004; Zerner, 2000;

Schroeder, 2000). The goals of the environmental justice movement are actually broader and more diverse. As Turner and Wu (2002) puts it, the development of environmental justice still has the problem that activists are far ahead of academic scholars. This thesis argues for the reconceptionalisation of environmental justice in a more pluralistic and pragmatic fashion and with an intercultural dialogue approach, which could provide the linkage between theoretical development and the multifacetedness of the environmental justice movement.

The case of Orchid Island reveals that local experience of the nuclear waste repository varies, from the Taiwanese groups' stress on scientific rationality and their positive valuation of the impact on local economy, to the Yami's anxiety and blame. It shows the different interpretations of the scope of the nuclear waste management problem that stem from different experiences and worldviews, and competing judgments about risks, safety and well-being. The Yami fisherman and housewife groups, especially the elder participants, reflect significant place-based cultural traditions and spiritualities. They relate radiation risk issues to tribal histories and memories, cultural practice, spiritual beliefs, and ideas about the stewardship of Orchid Island and Yami future generations. The elder Yami fisherman and housewife groups are anxious not just about risks to health and environment but also about tribal continuity. They blame the nuclear waste repository for poor harvests, illness and cancer, and nuclear waste has been linked to the fearful 'evil ghosts' in their traditional beliefs that bring misfortune. They also rely on God for chasing away 'evil ghosts' (see Chapter 4).

The Yami tribe differs from many environmental justice communities (minority or low-income communities) in the world in ways that reflect their significant cultural ties to the environment as indigenous peoples and their perception of risk associated

with cultural traditions. The findings from the Yami tribe challenge Beck's (1992: 41) contention that traditional society is a 'scarcity society', in which 'material misery and blindness to hazards coincide', and that there is a higher acceptance of new technologies for unemployed residents. The Yami tribesmen are not 'blind' to environmental risks as some fishermen, housewives, and professional participants stress that the tribe would not sell their land for the storage facility for huge amounts of money. The Yami fisherman and housewife groups recognize that the authority or Taiwanese people might regard them as 'poor', but some of the Yami account themselves as 'rich' because they are content with the simple life and thank God for giving the tribe natural resources to support their life. As one Yami housewife puts it: 'they [the authorities] seem to look down upon us – the ethnic minority, poor village, nothing. Yes, we are poor, but God would not say we are poor. We are abundant. This is God gives us, so we do not like Orchid Island to be polluted.'

Perspectives on environmental racism or environmental justice tend to label and see a victimized local community as a homogenous and united group of people (Ishiyama and TallBear, 2001). In fact, it is hard to find such a homogenous community where local residents have the same perceptions of risk and identify with a single conception of the common good for the community. Competing voices and interpretations that differ within the community appear to be ignored. Ishiyama and TallBear's (2001) research on the conflict surrounding the Goshute Indians' decision to host an interim storage facility for nuclear waste on the Skull Valley reservation reveal the divide between tribal leaders and tribal members about the risks and benefits of the facility. Similarly, the empirical study on Orchid Island reflects the emergence of disparate views on nuclear waste disputes within the tribe, and members of the Yami tribe should not be regarded as homogenous.

The Yami professional groups reflect more diverse views on nuclear waste disputes. The Yami professional groups consist of those who have experience of studying or working on Taiwan Island. They are involved in teaching, charity, church ministry and cultural workshops, and have more opportunity for contact with the Taiwanese people. Many of them are aware of global warming problems, although the nuclear waste repository is still seen to be the main cause of coral whitening. A few Yami professional participants recognize that other factors might lead to Yami cases of cancer, such as lifestyle, excessive drinking and their traditional dry and salty fish. The compensation offered by Taipower means different things to them. Some of them worry that the tribe is over-dependent on the compensation and argue that the tribe should continue to oppose the nuclear waste repository. Others are more concerned about cultural loss and the development of Orchid Island and do not see it as urgent to request the removal of the nuclear waste repository. They stress that compensation can be used to encourage the Yami to keep traditional crafts and language and improve their education (see Chapter 4).

There are complex and conflicting explanations for the disproportionate radiation risk suffered by the Yami tribe (see Chapter 4). The Yami groups, except the Yami Taipower employees, understand the disproportionate radiation risk as arising from the lack of democratic process and political resistance, and from bullying of the ethnic minority. The Yami Taipower employee group has articulated an explanation in terms of scientific rationality. The Yami Taipower employee group is aware that their positions are inconsistent with those of the Yami tribesmen. They acknowledge that there are various versions of rumours about the nuclear waste repository and that this involves the issue of 'who to trust'. The Taiwanese groups' conceptions of disproportionate risk are generally framed in terms of scientific rationality and

utilitarianism, while very few Taiwanese participants regard it as involving unfair treatment. Moreover, the differences in the framing of risk issues between the Yami and Taiwanese groups are significant. Nuclear waste disputes have been framed as an ethical issue in the majority of the Yami focus groups. But questions about how to manage nuclear waste risks seem to be framed in scientific, economic and political terms for the Taiwanese groups (see Chapter 4). The claims made by the Yami groups (except the Yami Taipower employee group) provide the basis for their anti-nuclear waste movement, and the ideas held by the Taiwanese groups show the reason why they tend to regard the Yami's opposition as irrational.

The consideration of environmental justice in cultural context leads to a deeper understanding of the values that are actually in conflict. There are competing understandings of the conceptions of environmental justice surrounding the disputes over nuclear waste management held by the Yami and Taiwanese groups (see Chapter 6). For example, the idea of the good life held by the Yami fisherman and housewife groups, and a few Yami professionals' rights-based notion, are in conflict with some Taiwanese professionals' utilitarian position. Some Taiwanese participants regard compensation as the best solution to cope with the potential environmental degradation caused by the nuclear waste repository or as a means to redress distributive inequity or costs. But the Yami do not regard compensation as a means to achieve fairness or making the decision of dumping nuclear waste on Orchid Island legitimate. The Yami groups' understanding of the responsibility for future generations in terms of the tribe and the stewards of Orchid Island are inconsistent with the sense of shared responsibility held by Taiwanese people. Incommensurableness of values indicates that a universal and strict normative form of environmental justice is inappropriate for such a complex situation.

Nuclear waste conflicts reflect both the recognition and distribution aspects of the Yami's struggles (see Chapter 5), which indicates that an environmental justice discourse solely focusing on the distributive dimension of justice is insufficient. The Yami groups do use a vocabulary of recognition in relation to particular historical events such as the dumping of nuclear waste on the homeland of the ethnic minority, the delay in its removal, and the four Taiwanese legislators' remarks about buying Orchid Island for a permanent nuclear waste disposal site. Besides the demand for cultural status and structural dimension of recognition, the Yami fisherman and housewife groups also reveal the need for intersubjective recognition, for example in relation to the interaction and dialogue between the Yami individuals and the government officials or Taiwanese people. On the other hand, the Yami groups also struggle for access to universities, jobs, social welfare and economic resources. With Young (1997, 2000) and Fraser (1997), issues of recognition and distribution are often interconnected. People engaged in political struggles may place more emphasis on one aspect than another at specific times, but both aspects are present (Tully, 2000). The Yami groups' struggle for redistribution tends to be interwoven with a stress on their worthiness of respect, while the Yami elites seem to focus more on the struggle for recognition. The Yami case shows that issues of recognition of difference and distribution are both crucial components of environmental justice.

There are frictions between the Yami elites and tribesmen. The Yami elites engage in struggles for the legal recognition of the tribal name, for landscape renaming and for aboriginal autonomy (see Chapter 4). Nuclear waste conflicts intersect with the Yami's struggle against the historical domination over the tribe and for self-determination. For the Yami elites, the change of the tribal name from 'Yami' to 'Tao' and the renaming of landscape features symbolize the elimination of cultural

domination and the ownership of Orchid Island. They demand that the aboriginal autonomous district could redress the status of domination or subordination. Although the Yami fisherman and housewife groups and some professional participants called the tribe Tao, the Yami teenage student and Taipower groups pay less attention to the symbolic meaning of tribal and landscape names. For the Yami tribesman and the Taiwanese professional groups, those Yami elites who demand aboriginal autonomy seem more concerned about the exercise of political power or the prospect of an individual political career. Many of the Yami tribesmen doubt whether aboriginal autonomy could bring the tribe a better life and whether the tribe has the capacity to be independent. The Yami professional and Taipower employee participants expressed their discontent with those Yami elites who declared the establishment of the tribal parliament preparatory committee without the consultation with the tribesmen.

Gaps between the Yami teenagers and the elder generations have been found. The Yami teenage student groups also expressed their anxiety about the negative impacts of nuclear waste on Orchid Island, but suggested that it might involve a bribery scandal between the Yami elders and Taipower. The Yami teenage student groups argued that the compensation should be used on education, welfare and public facilities, and opposed those elder Yami generation who wanted to distribute parts of the compensation to individuals.

As to ethnic tension and competing values between the Yami and Taiwanese groups, the gap between the young Yami and the elders, and the frictions between the Yami elites and tribesmen, I argue for a procedural approach that could help to increase the understanding within the tribe and defuse tension between the Yami and Taiwanese groups. For both the Yami and Taiwanese groups, the defects of the

decision-making procedure for nuclear waste facility siting had provided a basis for subsequent conflicts. The Yami fisherman and housewife groups and Taiwanese professional groups recognize participatory and democratic procedures as an element of environmental justice claims (see Chapter 6). But the experience of the public meeting showed the difficulty in bringing the Yami and Taiwanese together to have a debate with each other because of the plurality of and competing environmental values and ethnic tensions. The case of the divide between the Yami and Taiwanese showed that other forms of communication advocated by Young (1996, 2000) and Sanders (1997) such as rhetoric might in fact widen the perceived distance and gap; greeting and storytelling cannot provide much help with defusing the tension or offer a solution to the real situation (see Chapter 5). I argue that environmental pragmatism might provide an effective method that could help to fashion a convergence of ends among a variety of environmental communities, such as a non-nuclear Taiwan, stopping the source of nuclear waste and an improvement in monitoring the nuclear waste repository. Through a pragmatic approach, the Yami and Taiwanese environmental community could agree on ends without agreeing on ultimate values, or even ways of conceiving of the problem. It makes intercultural dialogue over environmental justice possible because people could argue about things for very different pragmatism and reasons and do not have to erase those differences (see Chapter 7).

Camacho (1998: 12) argues that, environmental justice advocates are not saying 'take the poisons out of our community and put them in another community.' Instead, they stress that 'no community should have to live with these poisons.' Camacho's points tend to suggest that 'environmental justice campaigners have a sustainability agenda' (Dobson, 2003: 85). Agyeman and Evans (2004) argue that the links between environmental justice and sustainability are becoming clearer. The Orchid Island case

provides support for this argument. It shows that the Yami professional participants or campaigners are aware of the need for a decrease in nuclear waste and environmental risks (see Chapter 7). Notions of environmental justice involve just distribution between the present generation as well as concerns for future generations. It recognizes the interconnected relationship between human beings and the environment, and encompasses issues of recognition of diverse culture and worldviews regarding to the environment.

Some researches on environmental justice argue for the potential for transforming environmental justice activists towards sustainability, citing the transformative effective of shifting their objective from sharing environmental burdens more fairly to campaigning for a reduction in the production of waste (Agyeman et al, 2003: 324; Cole and Foster, 2001; Schlosberg, 1999). Cole and Foster (2001: 160) give an example of Greenpeace USA's transformation through their interaction with the Indigenous Environmental Network (IEN) and the environmental justice movement. Greenpeace restructured its national policy and hired an Indian activist to work with nuclear issues on Native lands, and thereby 'moved from being vilified by Native activists for its ethnocentric anti-seal-hunting policies to being praised by Indian leaders for its strong support of Native struggles.' As discussed in chapter 7, a pragmatic approach to intercultural dialogue could help a variety of environmental communities recognize the plurality of voices and facilitate agreement on particular goals and environmental policies. Dialogue between the Yami, the Taiwanese and other aboriginal environmental communities with various traditions could enrich the notions of environmental justice. It might promote intercultural alliance building toward sustainability.

Sterba (2003: 18) points out that environmental justice raises the question of who is to count morally. My concern is not to argue for or against particular normative constructions, but to bring the interconnected human-nature relationship or nature's signals into intercultural dialogue over environmental justice. I argue that environmental justice does not need to succumb to the problems of anthropocentrism versus biocentrism because environmental justice activists have shifted the focus from the separation and confrontational relationship between the human and the nonhuman world, redefining the conception of environment to include where people live, work, and play (Taylor, 2000; O'Neal, 2000: 302). For the Yami, the tribe is an integral part of Orchid Island and nature is the basis of life-maintenance. The Confucianism, Taoism and Buddhism that have been central to the development of Taiwanese worldview also recognize the importance of harmonious relationships with nature (see Chapter 3). Recognition of difference can be extended to respect for nature as humans recognize themselves as members of the land community as well as the social community. Dryzek (2000) argues for effectiveness in communications that transcends the boundary of human beings and the non-human world. The Yami tribe's interconnection with Orchid Island supports Dryzek's points that indigenous people can probably do better in listening and interpreting the needs of ecosystems of which they are component parts. It includes the Yami fisherman and housewife group's idea of good life and their giving voice to the growth of taro, the possibility of soil contamination, the Yami professional groups' concerns about coral whitening and owl extinction, and the Yami teenagers' speaking for the decrease in the amounts of fish and shellfish.

There is always room to change for the Yami society and Taiwanese people because cross-cultural encounters have existed. For Douglas and Wildavsky (1983:

192), values and perceptions can change as long as social change is possible. They argue that we should think of the idea of knowledge as the changing product of social activity rather than regarding it as something solid and bounded. Different contexts and worldviews generate different perspectives and interpretations of environmental justice. The Orchid Island case tells a narrative that 'reveals the particular experiences of those in social locations, experiences that cannot be shared by those situated differently but that they must understand in order to do justice to the others' (Young, 1996: 131). It involves the dialectics between self and society in the ongoing process of social reconstruction as well as the dialectics between commonality and difference during the process of intercultural dialogue, which helps diverse local communities recognize the complexity of people's values and respect the differences. A pragmatic approach might help different cultural groups engage in intercultural dialogue to recast environmental justice and make it more problem-oriented.

Policy implications for nuclear waste management

Nuclear waste conflicts reflect complex relationships between the public and the institutions that develop over time and are reconfigured in the particular events. As discussed in Chapter 4, it is an often retold story within the tribe that the KMT government cheated the Yami, making the tribe believe that it was a fish cannery instead of a nuclear waste repository which was being constructed on the island in 1980s. Thus, some Yami have connected nuclear waste problems to discrimination against certain ethnic groups. The deficiencies of comprehensive surveillance programs and the failure to disclose the accident of rusted nuclear waste containers on Orchid Island in the late 1980s have further undermined public confidence. Moreover, the government officials and the state-run Taipower's failure to keep their promise of

removal by 2002 have led to Yami's grievances as well. The Yami tribe's historically accumulating mistrust of the Government and policies that was reinforced by further experiences of Taipower's failed response to tribal concerns is a serious obstacle to an effective resolution of nuclear waste management conflicts.

It is clear that the focus on technical analysis and scientific criteria is inadequate for risk management and to nuclear waste problem. The public response to risks and scientific information would be influenced by previous experiences and varous cultural and social factors, such as public mistrust of the authority, the Yami housewife's doubt about scientific claims and the results of health checks, the feeling of misrecognition, and lack of a sense of agency. Similarly, the manifest lack of public confidence in scientific risk assessments and control in the UK radioactive waste field reflects a long historical experience of 'failed institutional performance' (Wynne, 2002: 3). The nuclear industry is seen as 'inward looking, secretive and defensive' (Hunt and Wynne, 2000: 5). Wynne (2002) argues for the importance of establishing a genuinely independent long-term nuclear waste executive body that is transparent, accountable and independent from special interests and biases. An essential part of developing a trustworthy institutional culture in nuclear waste management is 'to embed real commitments to independent thinking and practice, openness, accountability, and vigorous debate and questioning' (p. 7). In Taiwan, regulation and risk management are dominated by technocracy and state-run Taipower (see Appendix II for details of organizations related to nuclear waste management in Taiwan) without the acknowledgment of the uncertain nature of nuclear waste management. Its top-down approach tends to undermine democracy. Taiwan can learn from Britain here about the need for institutional change towards transparent, accountable and openness to a variety of perspectives in order to rebuild public confidence.

The development of institutional procedures for a dialogue among different perspectives and stakeholders is crucial to the formation of nuclear waste policy and siting decisions. A bottom-up approach in setting nuclear waste policy would empower cultural groups to have a meaningful role in the decision-making process. Instead of centralization and preemption of debate by the government and experts, the diverse ethnic groups should have a voice in nuclear waste management. The Yami, the Taiwanese local residents and other indigenous peoples should be encouraged to take part in the decision-making process and engage in intercultural dialogue, which could increase mutual understanding among groups and lead to a pragmatic solution. With the consideration of the values held by the Yami and other Taiwanese indigenous groups, policy makers would have to prevent one particular meaning of environmental justice being used in the institutional context to the exclusion of other perspectives. Engaging in real dialogue across cultures could avoid the authoritative interpretations of environmental justice dominating over decision-making processes.

The Yami groups' diverse reactions to the compensation offered by Taipower and their criticisms of four legislators' remarks on buying Orchid Island for permanent nuclear waste storage indicate that the monetary evaluation of environmental damage is not working. Applying cost-benefit analysis or the polluter pays principle implies a single scale of value (Martinez-Alier, 2003; O'Neill, 1997b). The idea of the good life articulated by the Yami in Chapter 6 shows that for them the worth of the land, the tribal life on Orchid Island and human health are unpriced. There is a clash in standards of valuation when the languages of environmental justice are used against monetary valuation of environmental risks and burdens (Martinez-Alier, 2003: 221). Instead of the mere appeal to the experts, O'Conner and Spash (1999: 5) argue for 'non-compensatory multi-criteria decision aids or participatory methods of conflict

resolution' that are more appropriate for the situation of discrepancies of valuation. Although Government officials or Taipower, like the Taiwanese professional groups, seem to recognize the function of compensation to improve the Yami economic conditions, the Yami case shows that the payment alone cannot resolve the conflict of siting. As Schroeder (2000: 53) argues, the use of economic incentives by corporate interests or a market-centered perspective 'could work to *protect* powerful and wealthy interests, and to prevent more radical alternatives from being realized.' Native peoples' different ways of making decisions about the natural world must be acknowledged and incorporated into any decisions that will affect their life and future (Tarbell and Arguette, 2000: 107). Choosing a program or making a decision merely according to the expert judgments on behalf of the Yami or other indigenous people is likely to fail.

A commitment to health or health care provision has been regarded as an issue of social and environmental justice (Middleton, 2003; ESRC Global Environmental Change Program, 2001). In order to tackle the increasing Yami cases of cancer and their anxiety about nuclear waste, efforts need to be made to promote local health and medical services. The Yami should be well informed of other relevant factors discussed in Chapter 4 (e.g. eating habits, smoking and excessive drinking) that are seen to have a huge effect on the tribe's developing cancer. Besides preventing the negative effect of the nuclear waste repository, we need to improve the Yami access to medical services and reduce the harm to health caused by poverty and other dangers or chemicals in the environment. It is important to provide supportive services and measures for health and environmental improvement and to reduce the Yami disadvantage within wider society.

Policy discussions should reexamine the assumption that an increasing amount of nuclear waste or nuclear energy is needed. We need to extend our focus on local participation in issues of distributional equity to the procedures which produce the problems in the first place (Faber and McCarthy, 2003). As Heiman (1996: 120) argues, 'if we settle for liberal procedural and distributional equity, relying upon negotiation, mitigation, and fair-share allocation to address some sort of disproportional impact, we merely perpetuate the current production system that by its very structure is discriminatory and non-sustainable.' Moving nuclear waste from Orchid Island to Taiwan Island or other poor countries does not mean that nuclear waste dilemmas will be solved. To pursue a non-nuclear Taiwan, renewable energy and the stop of producing more nuclear waste burdens for future generations are the crucial task for environmental justice.

The emerging transformation: the individual, the community and institutions

Environmental justice communities are often seen as 'communities of resistance', passively reacting to issues, rather than taking a proactive role about environmental management (Peña, 2003). Agbola and Alabi (2003) bring a similar concept, 'selective victimization', a series of resistance movements seeking to prevent their environment from degradation. The Yami anti-nuclear waste movement also tried to convey the message of resistance to unfair treatment to the outside world. The Yami tend to identify the tribal anti-nuclear waste movement with the environmental justice movement and stress that both are striving for a healthy environment and for future generations. The Yami fisherman and housewife groups and professional groups tend to regard the Yami anti-nuclear waste movement as a symbol of tribal solidarity. In

fact, the empirical study reveals frictions within the grassroots anti-nuclear waste movement. The Yami Taipower employee group claims that many of the tribesmen have no choice but to join the campaign, otherwise they would be labelled as pronuclear or not gregarious. A few Yami professional participants feel that some Yami campaigners are irrational. The Taiwanese groups are critical of the Yami anti-nuclear waste movement as being disunited and involving self-interests. The Yami tribe's opposition is seen to represent parochial exclusion (see Chapter 4, 6).

Like Schlosberg (1999), Cole and Foster (2001: 14-5) also argue that the environmental justice movement can lead to transformation on different levels – the individual, the group and the community, ultimately influencing institutions, government and social structure. Grassroots environmental justice groups challenge the social structure and institutions that exclude their involvement in the decision-making process and demand for participation in decisions that affect their lives. Individual and marginal communities can be transformed 'from passive victims to significant actors in environmental decision-making processes', which could lead to the transformation of government institutions. As Cole and Foster (2001: 15) put it:

> ...community residents can move from a reactive mode to one in which they take the initiative and decision makers begin to respond to their concerns. In this way, decision-making bodies – government institutions and corporations – are also transformed. This mutually transformative power dynamic in disaffected communities reveals an important facet of environmental justice politics.

Cole and Foster (2001: 15) stress that the transformation of individuals, the community and government institutions lies in the establishing of coalitions and the networking of grassroots organizations across substantive areas. As Di Chiro (1995: 303) argues, 'what is new about the environmental justice movement is not the

"elevated environmental consciousness" of its members but the ways that it transforms the possibilities for fundamental social and environmental change through redefinition, reinvention, and construction of innovative political and cultural discourses and practices.' Following the argument for transformation, intercultural alliance building for environmental justice and networking could help to transform the Yami individuals and the tribe from being passive recipients and insular campaigners to being a crucial actor in decision-making processes. Shrader-Frechete (2002: 20-1) makes a similar argument that citizens have duties to become environmental justice advocates to work for the solution of environmental problem particularly through nongovernmental organizations. Some Yami housewife participants' idea of environmental justice in terms of the need to stop the production of pollution reveals the possibility of extending their concerns over the nuclear waste repository to other environmental issues and of forging cooperation with other concerned citizens and environmentalists. Building partnerships and networking within a variety of indigenous environmental organizations (the Orchid Island Anti-Nuclear Self-Help Association, the Orchid Islander Society in Taiwan, the East Paiwan Tribe Anti-Nuclear Self-Help Association, the Alliance of Taiwan Aborigines, etc.) and other Taiwanese environmental organizations could help to transform the Orchid Island community and the Taiwanese society toward environmental justice, from the positions of NIMBY to the insistence on 'Not In Anybody's Backyard.'

Intercultural alliances also function as a policy voice for local communities and indigenous peoples. The environmental justice movement that consists of a variety of grassroots activists and concerned citizens continues to shape environmental policy in the American context and increases opportunities for marginalized communities to participate in decisions. For example, President Clinton signed an Executive Order on

Environmental Justice in 1994. It has led to the set up of the National Environmental Justice Advisory Council, a group of stakeholders from the environmental justice movement, government, academia, and industry who provide the Environmental Protection Agency advice on how to best achieve environmental justice (Cole and Foster, 2001: 162-3). The Yami have suffered from a lack of adequate attention to tribal rights and participation in decision about local environments for a long period of time, including the measures of replacing some of the traditional semi-underground stone houses with concrete buildings, the Yami's opposition to the proposal for national park on Orchid Island, and the 'space invader' of the nuclear waste repository (see Chapter 1). Efforts need to be made to help the Yami and other aboriginal tribes recover from the trauma and negative memory of the exclusion from involvement in decisions that affect their lives and traditions. Government officials have began to respond to the indigenous peoples' struggles as the cabinet passed a draft bill giving autonomy to aboriginal tribes in June 2003 and it needs to proceed to the legislature. An intercultural environmental justice alliance could continue to send resources to the minority community at the bottom of the power hierarchy and challenge the power of growth-oriented government institutions and investors (Schnaiberg and Gould, 1994: 237-8). Authentic recognition and mutual respect are also crucial elements in bringing transformative politics.

Limitations of the thesis

One of the limitations of this research is the fact that theories of environmental justice are still immature and there are disputes over the definition, how it should be pursued, and theoretical construction of environmental justice. Environmental justice discourses connect complex environmental concerns and conceptions of justice. The

thesis has revealed the complexity of the notions of environmental justice as different ideas of justice and a wide range of concerns can conflict with each other (see Chapter 2, 6 and 7). However, the thesis in no way provides a definitive analysis of the multiple and competing conceptions of environmental justice, nor does it offer a complete answer to nuclear waste dilemmas. I grasp only some major dimensions of environmental justice, and adopt a pluralistic and pragmatic perspective and intercultural dialogue approach to nuclear waste conflicts in a pluralistic society.

This research involves complex issues of risk perceptions and values, and some limitations are methodological. The ethnic conflicts and gaps discussed in Chapter 1 might affect the relationship between the Taiwanese researcher and the Yami researched. Many tribal stories could be told strategically in the focus groups and the Yami participants might avoid telling certain things that are seen as not good for the tribe because I was seen not only as an outsider but also as Han. It also involves the problem that the individual Yami talk might be subject to group influence and the emotion generated by other participants in the focus group. Therefore, the discussions and interaction in a focus group might not provide a complete story about how they actually see the nuclear waste repository. Furthermore, local perceptions of the nuclear waste repository are shaped by wide range of social and cultural factors. The complexity of people's motivations and experiences increase the difficulty of analysis and interpretation of the Yami and Taiwanese participants' knowledge, meaning and the correlation between those factors.

Extended or repeated visits on Orchid Island would have allowed me to acquire more observation and informal interviews with local residents. It could have provided more observations about how the Yami cope with their worry about the nuclear waste repository in their daily life, how the Yami deal with the conflicts within the tribe, and

the interaction between the Yami, the Taiwanese and Taipower. But time and resource are practical limitations. The research also involves the problem of understanding the multifaceted Yami culture. Other aspects of the Yami culture and traditions have not been covered by this research.

Besides the Taiwanese professionals, there are small numbers of Taiwanese people who might also stay on Orchid Island for a long period time, such as housewives, anthropologist, and tourists. They could have provided a distinctive perspective on nuclear waste disputes, but it is harder to contact these people or recruit them for focus groups. The stories of the Taiwanese professional groups in the thesis are not intended to be representative of other Taiwanese public who have different experiences.

Future research

This thesis has provided a wide range of concerns and values that the Yami and Taiwanese groups have concerning environmental justice grounded in a particular context and experience. Future research can grow out of the work that has been done to date. One idea is to follow the case and see if further insights could be gained from the perspectives of various stakeholders with respect to environmental justice – environmental non-government organizations (ENGOs), policy makers and the industry. Numerous environmental and social organizations have emerged over past decades to oppose pollution, promote ecological goals and demand social reforms, which could provide nuanced ideas as to the notions of environmental justice. It is worthy of exploration of further dialogue among a variety of environmentalists and of potential coalition formation for substantial environmental issues, which might bring about a new developmental stage of Taiwan's environmental movements.

The development of Orchid Island and the interaction between the Yami, the Taiwanese public and other indigenous peoples reflect a dynamic and fluid process rather than the static one. It would be interesting to examine any changes of the Yami society over time as the impact of Taiwanese society or tourism continues. Also, if the Yami get more power in the decision-making process and do not feel misrecognized or powerless, it might lead to a change in their cultural identity. Maybe the Yami society and culture will change as well. Nuclear waste might be reconstructed in different way within the tribe rather than the fearful image of 'evil ghosts'. The Orchid Island community might provide another narrative, a new set of terms and different notions of environmental justice in the framing of the present and emerging environmental problems. It might reveal significant transformation of the individuals, the community and institutions in the future.

Nuclear or radiation risk might be perceived very differently in the distinct areas. Future research could involve the comparison between the Yami tribe and those Taiwanese residents around the nuclear power plants (e.g. the Yami and Taiwanese fishermen and housewives). The exploration of different perspectives of social groups could contribute to formulation of the policy problem of risk. It could also provide new perspectives on the conceptions of environmental justice, including different moral vocabularies and idea of recognition. Furthermore, researchers have revealed the importance of cross-national research that can provide beneficial insights into how different societies construct qualities of risk and respond to problems of technological uncertainty, and the way in which culture mediates understanding (Jasanoff, 1986; Kasperson and Kasperson, 1987). Research on the Taiwan case in a global setting and from a comparative perspective can learn from other countries' experiences. Future research could compare the Yami situation with the Indian community and other

indigenous peoples in the world. The comparative study of nuclear waste disputes in the context, say, of Orchid Island and West Cumbria could include the exploration of assessing and regulating risk, the role of science, local knowledge, environmental legislation and deliberation forums, etc.

There is a growing recognition of the value of the knowledge of indigenous peoples, based on accumulated observations and customary practices, for sustainable environmental management in collaboration with modern scientific knowledge (Memon et al, 2003: 205). Watson-Verran and Turnbull (1995) argue that Western contemporary technosciences should be regarded as 'varieties of knowledge systems' rather than 'definitional of knowledge, rationality, or objectivity'. Different cultures' particular ways of understanding the natural world should be 'compared as knowledge systems on an equal footing' (p. 116). Another research could explore the knowledge systems of the Yami or people within science-based Taipower culture. We could study the Yami or Taipower as a tribe and present an anthropology of knowledge, exploring issues such as what they believe and why; forms of agency in the context of technology, and how the contesting knowledge systems might develop a co-management framework.

Further efforts could be made to approach other environmental conflicts from the perspective of environmental justice. A growing literature engages in an exploration of the relationships between market-based programs for nature conservation and the social and environmental justice dimension in specific contexts, such as the Upper Amazon, Indonesia, Tanzania (e.g. Zerner, 2000). Indigenous people in Taiwan also face the problem of national parks on their historical lands, disputes over natural resource management, and issues of land rights and self-governance. Research on the distinctness of other Taiwan's aboriginal tribes and various environmental problems

they have experienced could contribute to the notions of environmental justice and facilitate better solutions or transnational collaboration.

Like most societies, Taiwan faces the problem of how to cope adequately with new inventions and technologies. According to Keulartz et al. (2004: 4), our technological culture has a dynamic character: 'old ways of life are continually being replaced by new ones, norms and values are continually being put up for discussion, and we regularly find ourselves confronted with new moral problems.' They argue that traditional philosophy or applied ethics has insufficient insight into the moral significance of technological artifacts and systems and that a pragmatist approach could be complementary to the management of deep value conflicts in a pluralist society. As discussed in Chapter 7, environmental pragmatism has been receiving increasing attention and research has demonstrated the usefulness of a pragmatic approach to specific environmental and social issues. For example, Hester (2003) attempts to defend pragmatic approaches to bioethics and show how particular critics have failed or succeeded. Cooke (2003) also argues that pragmatic bioethics represents a novel approach to the discipline of bioethics. It is worthy to explore whether a pragmatic approach can deal with competing values and interests and overcome the deadlock in the continuing debate between different groups in the context of social and technological transformation, such as the application of biotechnology, the GMO controversy and nanotechnology.

This thesis argues for a pragmatic perspective and intercultural dialogue over environmental justice that might provide a method of defusing tension in the context of Orchid Island and Taiwanese society. Further design and practical experimentation with the approach are required to explore how intercultural dialogue actually works. For example, Varner et al. (1996) use workshops in environmental ethics as a teaching

device to facilitate the resolution of environmental conflicts. They regard it as a tool for effective discussion and mutual respect without an attempt to provide a unified vision of values or goals. Another idea for future consideration would be the design of workshops to examine the interaction between various stakeholders (e.g. the Yami and Taiwanese residents, NGOs, Taipower and policy makers) to explore whether participants in the disputes could improve stakeholders' understanding of each other and acknowledgement of plurality of views, and help foster cooperative problem solving. Moreover, further design could encompass deliberations in a range of arenas to provide a context for the development of mutual understanding between groups with different life experiences, and to examine the dynamic processes of possible mutual learning between Yami and Taiwanese groups in deliberative settings. There will be different types of dialogue processes. Associated factors that will influence the dialogue and need to be considered include: how to recruit members of the Yami, the Taiwanese, other ethnic groups or stakeholders, the sorts of meeting, different approaches to facilitation, the role of the facilitator, principles for engaging the Yami and Taiwanese groups in dialogue, how to deal with certain forms of speech and behavior, and the appropriate venue for dialogue.

This thesis focuses on particular disputes over radiation risk and nuclear waste facility disputes in Taiwan. There are diverse types of environmental justice struggles within the global context, including the elimination of occupational hazards and creating a healthy work environment, opposing the destructive operations of multinational corporations, opposing exploitation of lands and peoples, making a conscious decision to reprioritize lifestyles, calling for education on social and environmental issues, and so on.[56] The linkages formed with nations that share

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[56] See Principles of Environmental Justice ratified at the First National People of Color Environmental Leadership Summit in washing, D.C., printed in Hofrichter (1993), pp. 237-9.

common experiences and develop strategies for environmental problems have been regarded as the significant evolution in the environmental justice movement (Miller, 1993: 133-4). One example that provides sign of hope is the recent transnational alliance between the Silicon Valley Toxics Coalition (SVTC) and the Taiwan Environmental Action Network (TEAN) to confront the environmental injustices emerging from Taiwan's high-tech clusters (Pellow and Park, 2002: 180). Future research can be designed for numerous environmental justice problems across local, regional, national and global levels, exploring how different groups organize and link their struggles to issues of rights, recognition, democracy, sustainable development, and so on. It can enrich philosophical debate over environmental justice and contributes to better policies and solutions in the face of the challenges in a changing world.

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Appendix I: Focus Group Topic Guide

I. Welcome and introduction (10 minutes)

1.1 Introduction

- Introduce moderator as a PhD student who is quite interested in local people's opinions on environmental issues.

- Explain that moderator will facilitate the discussion and the group will be discussing the environmental issues on Orchid Island. The assistant (my friend) will listen and look after the tape recorder.

- Explain that participants should feel free to express their opinions and their opinions matter, that there are no right or wrong answers. This should be an enjoyable experience.

- Explain that any questions that they may have about the research will be answered at the end.

- Ensure that the recording will only be used by the researcher and transcription will be anonymous that the participants can not be identified.

1.2 Warm-up question (explore participants' concerns about environment)

- Will you introduce yourself and saying one thing that is important to the environment of Orchid Island and one aspect that you are worried about?

II. Public perception on nuclear waste repository (15 minutes)

- Do you feel that the nuclear waste repository on Orchid Island have any impact on the environment? What kinds of effects do you think it has? What makes you say that?

- Do you feel that the nuclear waste repository on Orchid Island have any impact on human health? What kinds of effects do you think it has? What makes you say that?

III. The controversial issues (20 minutes)

- Where should the nuclear waste go? Why?

- Do you think that there should be compensation? What does the compensation offered by Taiwan Power Company (Taipower) mean to you?

- What is the better way to manage the compensation?

IV. The policy procedure (20 minutes)

- Who should make the decision? Why?
- Is it easy for you to get any information about nuclear waste? In what ways?
- In what ways do you express your opinion on the issue of nuclear waste? Have you ever joined the campaign against the nuclear waste repository? Why did you join or not join the protest?
- What should be done to improve the decision-making process?

V. Discussion on environmental justice (25 minutes)

- Why do you think the decision was made to dump nuclear waste on Orchid Island?
- Have you heard about the term 'environmental justice'? What does it mean to you?

What I would like to do now is to introduce you the environmental justice movement emerged in America in 1980s and hear your views about it.

Show statements on display board

> Environmental justice activists point out:
> low-income or the minority communities often bear greater environmental risks;
> live in a healthy environment is part of basic rights and no community should live with the pollutant.

- How do you think about the claims of environmental justice movement? Can the Yami anti-nuclear waste movement be regarded as environmental justice movement? Why?
- Do you think that you have any responsibilities for future generations? In what ways?

VI. Conclusion and feedback (5 minutes)

Is there anything else you like to say?

Thank them for participation and end the meeting.

Appendix II: Organizations related to nuclear waste management in Taiwan
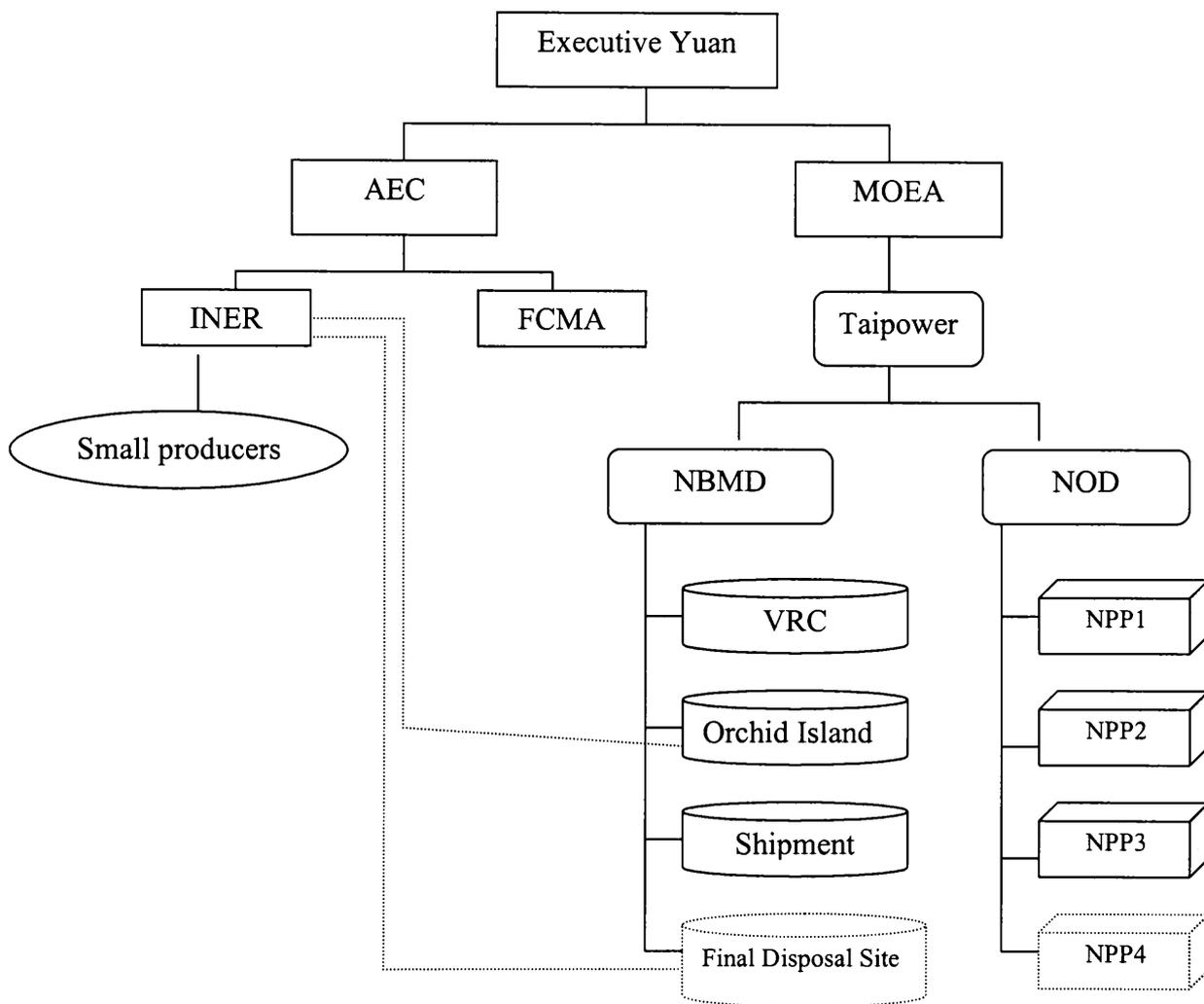
Source: Atomic Energy Council. (2003). Current status of radwaste administration in Taiwan. Available at http://fcma.aec.gov.tw/english/engfrm.htm#03 (last access 30/07/04).

Note:
a. Both the Atomic Energy Council (AEC) and the Ministry of Economic Affairs (MOEA) are under the Executive Yuan. The Fuel Cycle and Materials Administration (FCMA), a subordinate organization to the AEC, assumes regulatory control over nuclear waste management matters. The Institute of Nuclear Energy Research (INER) was empowered by AEC to take responsibility for collecting nuclear waste generated by small producers and to treat the waste if necessary.

b. In Taipower, the Nuclear Backend Management Department (NMBD) and the Nuclear Operation Department (NOD) are taking care of nuclear waste generated by nuclear power plants (NPPs). NOD's major responsibility is to supervise treatment and storage of low-level nuclear waste within NPPs, whereas NMBD is responsible for nuclear waste transportation, the operations of the Orchid Island Storage Site and the Volume Reduction Center (VRC), and final disposal of low-level nuclear waste in Taiwan.

Appendix III: Photos of Orchid Island

The gate of the nuclear waste repository on Orchid Island
Source: author

The interim nuclear waste repository (above-ground storage).
Source: author

The traditional Yami semi-underground stone houses in Yeyin village (the black ones). Some have been replaced by the concrete block houses (the white ones).
Source: author

The Yami semi-underground stone houses (cool and invulnerable to typhoons in summer, and warm in winter).
Source: Lanyu Island Comprehensive Information Web
Available at http://lanyu.taitung.gov.tw/e_travel/e_travel-b1.htm
(last accessed 27/09/04)