

Delayed Reactions:  
'Conjuring' Agent Orange in Twenty-First Century Vietnam

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## ABSTRACT

The intended effects of Agent Orange—the chemical herbicide the US military used during the Vietnam War to defoliate forests and destroy crops—were ‘horrendous’; its unintended side-effects on human health, including cancer and birth defects, were ‘abominable’. But what about the side-effects of conjuring up ‘Agent Orange’ decades after the end of the war in contemporary Vietnam? The story of Agent Orange is a relatively new invocation of old facts that were buried in the exigencies of everyday life in postwar Vietnam. The identity of so-called “Agent Orange victims” born in the wake of the emergence of nationwide movement to seek justice on their behalf remains tenuous due to the lack of a unified institutional support for Agent Orange victims and continuing uncertainty of scientific evidence implicating the chemical as the cause of their diseases and conditions. Based on a thirteen-months fieldwork in Central Vietnam, focusing on A Luoi district of Thua Thien Hue province, this thesis explores how the new discourse of Agent Orange and dioxin affects ordinary people’s perception of risk, and their relationship to the environment, family, community, nation-state, and the memory of war in regions contaminated with Agent Orange.

Les effets souhaités de l’Agent Orange –ces herbicides chimiques utilisés par l’armée américaine pendant la guerre du Vietnam – étaient le défoliation des forêts, ainsi que la destruction des récoltes, tous deux des effets terribles. Ses effets secondaires non-souhaités sur la santé humaine, incluant le cancer et des malformations de naissance étaient, quant à eux, abominables. Mais que penser des effets secondaires de l’évocation de l’Agent Orange, des décennies après la fin de la guerre au Vietnam d’aujourd’hui? L’histoire relativement récente de l’Agent Orange fait ressurgir du passé des faits enterrés sous les exigences de la vie quotidienne du Vietnam d’après-guerre. L’identité des soi-disant « victimes de l’Agent Orange », apparue lors de l’émergence d’un mouvement national visant à obtenir justice pour eux, demeure délicate en raison de l’incertitude scientifique causale qui persiste, et à cause du manque de soutien institutionnel unifié pour les victimes de l’Agent Orange. Basée sur treize mois de recherche de terrain dans le centre du Vietnam, au sein du district d’A Luoi de la province de Thua Thien Hue, cette thèse examine la manière dont les nouveaux discours sur l’Agent Orange et la dioxine affectent la perception du risque des personnes ordinaires, leurs relations à l’environnement, à la famille, à la communauté, à l’état-nation, ainsi que leur souvenir de la guerre, dans une région contaminée par l’Agent Orange.

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“I am tired of speaking about Agent Orange. I am no longer interested in this topic. You know why?”

Fieldwork was jarring from Day One. I was at the *Office of Genetic Counselling and Disabled Children* at the Medical School of Hue University, visiting Dr. Nguyen Duc Minh.<sup>1</sup>

Dr. Nguyen Duc Minh was famous. He had conducted one of the few studies on health effects of chemical herbicides (often known as ‘Agent Orange’) in A Luoi [more or less pronounced as a-*loo-i*] district of Thua Thien Hue province, where I was planning to conduct my ethnographic research. Many people told me that he was someone I *must* meet if I wanted to research the effects of this chemical herbicides in Hue province. They turned out to be absolutely right, although for reasons probably quite different from what they imagined.

I first encountered his name in Diane Fox’s (2006) doctoral thesis. When she had interviewed him in the early 2000s, he was still finishing up his own doctoral thesis on birth defects in A Luoi valley and Hue City, Thua Thien Hue province, and in Cam Lo, Quang Tri province. After spending several hours explaining about his research to her, Dr. Minh said, “But truly, [...] we don’t need to know about the past. The war is behind us. We know a lot about dioxin already. What we need now is knowledge to help these children and their families.” (Fox 2006: iii). He then took her to meet some of the families of disabled children.

My encounter with Dr. Minh turned out to be somewhat different.

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<sup>1</sup> Notes on Vietnamese orthography: Vietnamese language use Latin scripts with some diacritics. For example, Vietnam is written as *Việt Nam* with space in between words. In this thesis, I decided to anglicize all the personal names and place names. For example, for my field site, instead of writing *A Lúoi*, I decided to write A Luoi, which is consistent with the way in which it is written in the scientific literature or journalistic literature in English (eg. Hatfield 1998). One exception is when I am introducing Vietnamese words to highlight the fact that it is a Vietnamese concept. In these cases, I include Vietnamese orthography when the word is used for the first time.

I decided to take this approach because I believe that my task as an anthropologist writing in English is to translate my discovery in Vietnam for Anglophone audience. Diacritics would mean nothing for people who do not know Vietnamese, and it would be a distraction for their reading process. On the other hand, Vietnamese readers who know English are usually quite used to reading Vietnamese without diacritics and they would be able to recognize names and words without diacritics as long as it is in a proper context.

“You read Vietnamese, don’t you?” Dr. Minh said, and handed me his thesis to photocopy, as I tilted my head in half-yes, half-no. He clearly did not want to talk about his doctoral work.

“There is a lot of research done but not enough evidence,” he said. “The trouble is methods. When American epidemiologists see our work, they say that it’s not the right methodology.”

I suspected something must have happened to him to have caused him such disillusionment about epidemiological research on the effects of Agent Orange in Vietnam. When I asked him what happened, he said, “You know, I am a human being. My ideas change,” and leaned back in his chair.

When you are interested in helping the children with disabilities, especially the poor, there is a moral problem if you differentiate the victims of Agent Orange from those who are not the victims. You understand why? If you are a victim, I help; but if you are not a victim, I don’t help? It’s a moral problem! There are birth defects everywhere in the world. The problem in Vietnam is related to the rate, to prevalence. But the children [with disability] need help no matter what the cause is.<sup>2</sup>

Diseases that have come to be associated with dioxin, such as cancer and birth defects are recognized biomedical diseases in their own right; they occur among the general population unexposed to dioxin. Unlike ‘Gulf War Syndrome’, which is a medical classification for a set of unexplained symptoms associated with the military service in Gulf War, most experts on Agent Orange and dioxin do not talk about ‘Agent Orange disease’ or ‘Agent Orange syndrome’.<sup>3</sup> Furthermore, the association with Agent Orange or dioxin has no bearing on the diagnosis and treatment of the patients.

On the other hand, whether ‘Agent Orange’ would prove to be poisonous to the exposed

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<sup>2</sup> Dr. Minh was one of the few people in Vietnam who spoke to me in English.

<sup>3</sup> Occasionally, the expression “Agent Orange Syndrome” appears in parallel to ‘Gulf War Syndrome’ (Wessley 2001) or casually on articles on other issues like disability in Vietnam (Villa et al 2003). However, these uses are not common in most literature on Agent Orange.

population in Vietnam has been carefully followed by scientists and peace activists around the world ever since the 1960s. In the twenty-first century Vietnam, this political and scientific aspect of the legacy of Agent Orange continues to have its effects on people's lives. To be identified as a victim of Agent Orange also has unwanted side-effects.

Dr. Minh said:

On the TV, radio, people talk, talk and talk about Agent Orange, victims of Agent Orange, genetic mutation, [how it is] passed on from this generation to the next, and so on. For example, you are the father [of a child with birth defects]. Everybody helps you because you are the victim [of Agent Orange. But], you may also have some normal children. They'd become adult and they'd have a boyfriend or a girlfriend, then [others] find out that this family have a child with disability. Bye-bye, bye-bye-bye-bye. That's the way. That's the problem! Some families, they don't want to contact the people who can provide intervention. They don't want to talk about it because they want to protect themselves and their children.

There were ways of preventing birth defects or reducing the disabilities caused by them if they were discovered early enough, said Dr. Minh. Folic acid administered to prevent spina bifida, or prenatal screening and abortion (which he did not like very much) for severest cases of birth defects: if discovered early, appropriate measures could be applied to reduce the severity (or the number) of birth defects like cerebral palsy, mobility disability and mental retardation. This therapeutic practice was what he was interested—to provide medical aid to reduce their disability—and in this work, identification of a patient as a 'victim of Agent Orange' may turn out to be a hindrance. Dr. Minh's story was a warning to overzealous foreigners who brandished their sense of justice and expressed anger in support of the so-called 'Agent Orange victims', while neglecting the complex local reality and pragmatic questions of reducing suffering.

In March 2009, halfway through my fieldwork, the five year long legal adventure of the Vietnamese Agent Orange victims came to an end, when their case was dismissed by the Supreme Court of the United States. With the culmination of the litigation, the supporters of the Vietnamese



Agent Orange victims were now faced with the need to find new venues and methods to tackle the problem of seeking justice in support of the victims. One American expatriate commentator in Hanoi prophesied a cooling down of a nationwide fervour to seek justice in international arena and to express solidarity with the victims of Agent Orange. Humanitarian aids, according to this commentator, ebbed and flowed like a ‘fashion’. The humanitarian effort to aid the victims of Agent Orange was, perhaps, also going out of fashion. Thus, while my predecessor, Diane Fox, and I were both taught by Dr. Minh to look at the legacies of Agent Orange in a wider context of life, I was set on a path somewhat different from hers by a distinctive ‘mood’ of the time in which I was doing my research.

Inspired by Dr. Minh’s argument that what was needed was the knowledge that could be used to help the disabled people, Diane Fox (2006) took an advocacy approach, conducting a multi-sited research on the narratives of the families with disabled children and produced a complex and nuanced account of their lives and their memories of the War. Having been entrusted by her informants to tell their stories, Fox’s main goal was to give voice to their complex experiences – not only in the realm of politics but in the context of everyday life. Through this act of bearing witness to the suffering of the victims and their families, she sought to convey the shared humanity of people she came to know, and to generate a story that may somehow become helpful to them.

In contrast, I focus on the side-effects of conjuring ‘Agent Orange’ in contemporary Vietnam. As I discuss below, in Vietnam, the story of Agent Orange is a relatively new invocation of old facts that were buried in the exigencies of everyday life in postwar Vietnam. This conjuration of ‘Agent Orange’ (‘one significant ghost’, as in Fox’s (2008) dissertation title) in contemporary Vietnam has its own consequences. What are the implications of this introduction of

the discourse of Agent Orange on ordinary people's<sup>4</sup> perception of risk and their relationship to the environment, food, family, community, nation-state, and memory of war in regions contaminated with Agent Orange? How is the figure of 'Agent Orange victim' constructed in the context of the political mobilization to raise awareness about the remaining effects of Agent Orange, and seek justice on their behalf? Partly because of my theoretical interests and the particular historical conjuncture in which I was doing my research,<sup>5</sup> I chose to focus on the periphery of Agent Orange movement, on the stories that are not on the front page of Agent Orange story, people who are not quite (but almost) considered to be Agent Orange victims, and the dilemmas faced by the victims' family members, neighbours, and aid workers.

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This research was made possible by the help of many people. My first thanks goes to the unnameable individuals who provided me with insights, stories and friendships during my fieldwork in Vietnam. In order to ensure their anonymity and confidentiality, I used pseudonyms for all these private individuals that appear in this thesis with whom I had any personal interaction. The institutional sponsorship of Institute of Culture, Information and Sports in Vietnam was also indispensable in navigating through the bureaucratic maze of doing research in Vietnam. I express special thanks to my research assistants from the Institute and from Dong Son commune.

Years of mentorship of my supervisors, Dr. Allan Young and Dr. Ellen Corin, helped shape my theoretical interests and styles of thinking that resulted in this thesis. I express my utmost gratitude for their encouragement, wisdom, and critical and insightful comments which kept me going during my writing process.

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<sup>4</sup> 'Ordinary people' are usually quite clear about what 'ordinary people' mean. But in case the readers are confused, when I speak of 'ordinary people,' I usually mean people who are not scientific experts or political elites.

<sup>5</sup> I was never entrusted by anybody to tell their story. Rather, some of the victims' family members appeared wary to talk about Agent Orange and their experiences.

I also thank Carolina Pineda, Remy Rouillard, Julia Freeman, Ari Gandsman, Annie Jaimes, Noor Johnson, Gillian Chilibek, Scott Matter, Diane Fox and Sandra Hyde for their insightful comments on chapter drafts, translation of the abstract and loan of their voice. Special thanks to Koreen Reece for her relentless proofreading and a valiant effort in trying to make this thesis readable.

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—PART I—  
THRESHOLD OF IDENTITY



Map of Vietnam: (<http://www.warchat.org/history/history-asia/vietnam-war-facts.html>)

## CHAPTER 1 BELATED MOVEMENT: AN INTRODUCTION

### *VAVA v. Dow et al (2004)*

In the winter of 2004, the Vietnamese Agent Orange movement gained a sudden boost in momentum when a group of Vietnamese representing the victims of Agent Orange filed a lawsuit in the US court. According to one representative of the *Vietnamese Association for the Victims of Agent Orange/Dioxin (VAVA)*—the non-governmental organization (NGO) representing the plaintiffs in the litigation—the timing was largely accidental. Ten years after the normalization of diplomatic relations between Vietnam and the United States, the expiry of the Statute of Limitation was arriving fast—or so the leaders of VAVA were told by the American lawyers they consulted. If they were to embark on a legal action, it was then or never.<sup>1</sup>

The VAVA was assembled in December 2003 to represent the victims in the class action litigation. In January of the following year, they filed a class action lawsuit in the federal district court in New York, where now the aging Judge Jack Weinstein—who had presided over the American veterans’ case two decades ago—still held his bar.<sup>2</sup> The defendants also comprised a cast of familiar players in the controversies on agrochemical risks, including high profile multinational corporations such as Dow Chemical and Monsanto Company and their subsidiaries. In this class action litigation, *Vietnamese Association for the Victims of Agent Orange/Dioxin v. Dow Chemical & Co* (hereafter *VAVA v. Dow*), the plaintiffs claimed that they suffered from the toxic effects of Agent Orange and other chemicals that the defendants manufactured, and that the defendants were guilty of “aiding and abetting violation of international law and war crimes.” The

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<sup>1</sup> This turned out to be untrue according to Weinstein; see *VAVA v Dow* (Decision to dismiss 2005).

<sup>2</sup> *Vietnamese Assoc. for Victims of Agent Orange/Dioxin v. Dow Chem. Co.*, MDL No. 381, 04-CV-400 (E.D.N.Y. )

plaintiffs sought “money damages for personal injuries, wrongful deaths and birth defects and [...] injunctive relief for environmental contamination and disgorgement of profits”<sup>3</sup>

Three decades after the end of the Vietnam War, the alleged victims of Agent Orange in Vietnam finally brought their grievance to court.

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Between 1961 and 1971, the United States military used chemical herbicides for forest defoliation and crop destruction in Vietnam. ‘Agent Orange’ was a code name for one of the chemical formulas used. It was composed of two chemicals, 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T), and the latter’s contaminant, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). It would be known in the 1970s that this TCDD dioxin was largely responsible for the toxic effects of Agent Orange.<sup>4</sup> In 1969, it was discovered in the United States that 2,4,5-T caused birth deformities in laboratory mice. By the time the United States terminated its use of the chemical herbicides in Vietnam in 1971, almost 75 million litres of herbicides had been sprayed over almost one tenth of the landmass of South Vietnam (Stellman and Stellman 2004, Ngo 1970).<sup>5</sup>

The use of Agent Orange in Vietnam was already a hotly debated issue during the War. It received condemnation in international forums such as *Bertrand Russell’s International War Crimes Tribunal* and *Congressional Conference on War Crimes and American Conscience*. Many people worldwide protested against this ‘chemical warfare’. Scientists also expressed concern

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<sup>3</sup> VAVA v. Dow et al 2004 Amended Class Action Complaint 04 CV 0400

<sup>4</sup> Although it is rather redundant to say TCDD ‘dioxin’, since one of the ‘Ds’ in TCDD is dioxin, I will sometimes refer to it as ‘TCDD dioxin’ for ease of reference.

<sup>5</sup> In later estimate, almost 360kg of TCDD dioxins was released into the environment. Ngo (1970) claims that 3.8 million acres of arable land in South Vietnam was sprayed with American herbicides. One thousand peasants and 13,000 heads of livestock died as the direct consequence of this operation. He claims to have taken this statistics from Yoichi Fukushima’s study, but he does not provide us with a reference.

about the long term health effects of the chemicals on humans including cancers and birth defects. Decades later, however, Agent Orange remains an unsettled issue, both in terms of justice and as a scientific debate.

The issue first resurfaced in the public's attention in the West in 1978, when the US veterans of the Vietnam War began to file complaints in court over the alleged health effects of Agent Orange. Over the next four years, the lawsuits grew in scale, involving 15,000 individual veterans and 600 separate suits (Novey 1988). These cases were consolidated into one class action suit in 1983 under the guidance of Judge Weinstein of the Federal District Court in Brooklyn, New York. The veterans' Agent Orange litigation (now turned into 'mass toxic tort litigation') enjoyed enormous public visibility, and in 1984, they reached a 180 million dollar settlement.<sup>6</sup>

However, the subsequent cases filed by veterans who opted out of the settlement of the class action suit have all been dismissed without trial. One reason was that the scientific studies published in the same year had cast doubt on previous assertions about the alleged toxic effects of Agent Orange. Furthermore, the legal climate had changed in the late 1980s, making it more difficult to sue government contractors like the defendants (see Part II). In Vietnam, however, the issue of Agent Orange remained largely dormant during these three decades, and except for scientific experts and some political elites, most Vietnamese people knew very little about what was happening across the ocean with the veterans in the United States.

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During my fieldwork in 2008 and 2009, the campaign to recognize the plight of the victims of Agent Orange and to gather support for their welfare was already a nation-wide

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<sup>6</sup> Many veterans felt betrayed by this settlement. The amount of money may seem quite large, but because of the large number of litigants, each veterans received only a small amount of compensation.

movement in Vietnam. The midday news on the VTV (Vietnam Television) network frequently showed reports related to Agent Orange victims. National dailies like *Tuoi Tre* and *Thanh Nien* often ran stories on families with multiple children with birth defects.<sup>7</sup> Besides the staggering ecological devastation it caused, Agent Orange also left many exposed people with terrible health consequences such as cancer and diabetes, and birth defects among their offspring. It was said that there are now third generation of Agent Orange victims, born to parents who neither had experience of war nor of disabilities due to Agent Orange. It was a frightening story which filled the national media in 2008.<sup>8</sup>

But once you paused and zoomed in on the identity of ‘Agent Orange victims’, its contours began to blur.<sup>9</sup> Today, it is said that there are about 3 million victims of Agent Orange in Vietnam.<sup>10</sup> Who this ‘three million’ includes, however, is not entirely clear. In fact, it is generally thought that precise number of Agent Orange victims is largely unknowable due to a lack of financial and technical capacity to precisely identify victims. By the time Agent Orange movement began in Vietnam in the 2000s, already three decades had past since the war. This almost three decades of silence about the toxic effects of Agent Orange has contributed to the uncertainty of the subjective experiences of the people affected by the consequences of Agent Orange.

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In March 2005, Judge Weinstein of the federal district court of New York dismissed the

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<sup>7</sup> *Tuoi Tre*. 2008. *Cha me nuoi con bien ho lai lang*. *Tuoi Tre* 20 March 2008.

<sup>8</sup> see Gammeltoft (2007) on how imagination about the effects of Agent Orange may have affected the practice of using ultrasound prenatal testing in places like Hanoi.

<sup>9</sup> Hereon, I will leave out the scare quotes around ‘Agent Orange victim’ or ‘victim’ for readability. But when I say ‘Agent Orange victim’, I mean people who are disabled or suffering from diseases and conditions suspected (by authority, NGOs, families, or community members) to be caused by Agent Orange exposure.

<sup>10</sup> As far as I can tell, this number came from Stellman et al’s (2003) estimate published in the journal *Science* that “at least 2.1 million but perhaps as many as 4.8 million people would have been present during the spraying”. Over the years, this number settled on “3 million ‘victims’ of Agent Orange” in Vietnam.



claims of the Vietnamese plaintiffs based largely on two arguments. One was a legal argument glossed as ‘government contractor defence’, which basically said, ‘since the government made them do it, it is not their fault’. The other was an argument that while dioxin is a poison, Agent Orange is a herbicide, and not a poison; and that insofar as Agent Orange is not a poison, its use does not violate international laws of warfare.

To those who have heard something about Agent Orange and dioxin, and come to think as though Agent Orange *is* dioxin, this may sound like a hairsplitting argument. Indeed, the founders of VAVA, which represented the plaintiffs, consciously added ‘/Dioxin’ to its name in order to emphasize this sameness between dioxin and Agent Orange.<sup>11</sup> Weinstein, on the other hand, refuted this equivalence. This question of *what* the substance is—and in particular, whether Agent Orange is a poison or not—was one of the central questions in the litigation.

### ***Belated Politics***

Outside Vietnam, the political mobilization of Agent Orange victims had begun to coalesce at least by the 1980s.<sup>12</sup> But in Vietnam, ‘Agent Orange victim’ (*nan nhan chat doc da cam*)<sup>13</sup>—as a socially identifiable group of people with distinct claims and grievances—emerged as a new identity term under an intense public awareness campaign which erupted in the new millennium. If American soldiers who were exposed to the chemicals during the war were harmed by its toxic effects, it seemed likely that the Vietnamese people who continued to live in the contaminated areas were also adversely affected by these chemicals. However, this fact went largely unnoticed by most people in Vietnam. If the topic of Agent Orange was mentioned, it was

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<sup>11</sup> personal communication with VAVA representative.

<sup>12</sup> Beyond the United States, veterans’ Agent Orange movements also began in countries like the Australia and South Korea.

<sup>13</sup> *nạn nhân chất độc da cam*

in the privacy of clinics and homes. And when it was spoken about, it was spoken only in speculative terms. Very little attention was paid to public education about the harmful effects of Agent Orange, not to mention the welfare of the ‘victims’. ‘Victims’ remained largely invisible to the public—and in some sense, to themselves as well—in the context of general hardship in the war and postwar era. A retired medical doctor in Hanoi explained it to me thus:

When people are living in such a hard condition, bad food, bad water, how can you tell? It was only afterward that they gathered the information together, and only then they could tell that rate of cancer had increased, for example. Think of malaria. There were so many problems with malaria. Dioxin decreases immune system, and makes people susceptible to infectious diseases. Only after doing epidemiological studies can they find out the real cause of what was happening. But people themselves, they can’t tell. Say *quái thai* [(literally ‘monster births’, referring to severe cases of birth defects)], there is a belief that it is the result of sin of past generation. So they don’t tell others because they fear that if they did, their children would have problem getting married.<sup>14</sup>

Of course, some people had known about the toxic effects of Agent Orange for a long time. Vietnamese scientists, for instance, have been studying the consequences of the chemicals under the leadership of physician Dr. Ton That Tung since the war. The first news of the possible toxic effects of Agent Orange came sometime during the war from Nguyen Phuc Buu Hoi who had made his name in Paris as a medical and biological scientist.<sup>15</sup> With the tip from Buu Hoi, North Vietnamese scientists began to look into the effects of the herbicides, sporadically sending teams of scientists to the South to regions sprayed with the chemicals, but war and post-war hardship

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<sup>14</sup> Personal communication. A brief survey among some friends in Hue City where I was based during my fieldwork showed that most people had not heard about the health consequences of Agent Orange until the end of the 1990s. One of them remembered watching a film on the chemicals used during the war at the end of the 1980s. But the general consensus was that it was not until the end of 1990s that people began to see the news about Agent Orange in the media. A librarian at Centre for gender and development studies identified 1998 as the year in which the news on Agent Orange began to appear on papers.

<sup>15</sup> Personal communication.

made comprehensive study impossible.<sup>16</sup>

In 1980, the central government in Hanoi established Steering Committee 10/80 (hereafter the 10/80 Committee) with the mandate to coordinate research by scientists of various specializations, including biologists, chemists and medical doctors who were concerned with the long term effects of Agent Orange. The results of their studies, however, were considered classified material, and except for some findings presented at international conferences on Agent Orange organized in 1983 and 1993, they were largely hidden from the Vietnamese public.<sup>17</sup> Many of the results from the studies in this period would appear in the journal *Doc Hoc*<sup>18</sup> (Toxicology), which began publication in 2006.

The situation began to change in the late 1990s. The central figure in ushering in this change was a former military doctor named Dr. Le Cao Dai. He served in the Central Highlands around Buon Me Thuat during the war, where he was also exposed to Agent Orange. Like Tong That Tung, who headed the 10/80 committee, Le Cao Dai was a specialist in liver cancer, and thus saw many cases of cancers, which he suspected were caused by Agent Orange. In the late 1990s, he began to write about Agent Orange in the media, explaining its potential health effects.<sup>19</sup>

The reception of the Vietnamese government toward such an initiative however, was

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<sup>16</sup> Around this time, several teams of American scientists organised by the AAAS (American Association for the Advancement in Science) and NAS (National Academy of Science) arrived in South Vietnam to assess the ecological and human health consequences of the chemical herbicides. These studies, however, ended by 1975, when American scientists lost their footing in the South Vietnam following the fall of Saigon. (Boffey 1971, NAS 1974). One of the Western survey on the health effects of Agent Orange was reported in 1972 by a British sociologist Hilary Rose and a biologist Steven Rose, who reported from Hanoi that refugees from the South Vietnam had told them about strange births and miscarriages among humans and livestock after exposure to chemical spraying. (Hilary Rose and Steven Rose 1972. Chemical Spraying as Reported by Refugees from South Vietnam. Science vol. 177)

<sup>17</sup> During this time, many of the scientists originally researching on Agent Orange are said to have left the study, after growing tired of the secrecy (personal communication).

<sup>18</sup> *Độc Học*

<sup>19</sup> Some American expatriates living in Hanoi also began to privately speak to the Vietnamese officials suggesting that something should be done.

cautious at first—sometimes even hostile.<sup>20</sup>

### *Reasons for Secrecy*

During the war, North Vietnam condemned the US herbicide warfare program in their wartime propaganda as “chemical warfare”. In the early 1970s, they appealed to the international community for redress when the news of babies born with terrible deformities was reported in the South (see Part II). But in the post-war era, the Vietnamese government remain relatively silent about the problem of Agent Orange. One reason for this reticence was the international isolation Vietnam faced after their invasion of Cambodia in 1978. The United States used this opportunity to step up the embargo against the newly unified Vietnam. And under deepened isolation from the international community and the mounting cost of the war in Cambodia, Vietnam fell into an economic crisis. By the mid-1980s, the politburo of Vietnam saw economic development and the escape from international isolation as its first priority. There was also the presence of China to the north, which, after their border conflict in 1979, was perceived as a growing threat to the national security of Vietnam. Under this evolving context of international diplomacy, the normalization of relations with the United States seemed essential. As bringing back the issue of Agent Orange to the surface could pose a detriment to this process of normalization, the government wanted to limit the private citizens raising the issue in public arena. Even after Vietnam and the United States re-established their diplomatic and trade relations in the mid-1990s, the situation did not change immediately. In the process of normalization, there was a tacit agreement between the two governments that Vietnam would not seek war reparations from the United States.

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<sup>20</sup> as a life-long friend of Le Cao Dai recalled.

There was also a more direct economic reason for the reluctance of the Vietnamese government to raise the issue of Agent Orange in public. As agricultural and aquacultural products were the main export items for Vietnam, the government feared that drawing too much attention to the issue of Agent Orange and dioxin could damage the export of products such as rice, fish and coffee produced in the South.<sup>21</sup>

It turned out that this paranoia was not altogether unfounded. In 2000, a US Senator from one of the southern states attempted to bar the importation of catfish from Vietnam, claiming that it may be contaminated with dioxins (Chiba 2004). It was an ironic incident given that the Clinton administration was still maintaining that there was insufficient evidence of the health effects of dioxins in Vietnam. What furthered this irony was that, upon examination, catfish imported from Vietnam was found to contain less dioxin than the ones caught in the Mississippi River. While the Senator's proposition was rejected as law, he lobbied to make it mandatory to label 'catfish' from Vietnam as '*basa*' (as it is called in Vietnamese)—because 'catfish' from Vietnam were of a different family from the ones in North America. With this distinction made, the rest can be left up to the consumers to decide. Even if dioxin contamination of agricultural and aquacultural exports from Vietnam is found to be negligible, wide publicity of Agent Orange tragedy in Vietnam may still affect consumer behaviours. To this day, the Ministry of Agriculture of Vietnam is wary about drawing too much attention to the issue of Agent Orange (Martin 2009).<sup>22</sup>

In the 1980s and the early 90s, scientists, who would later become vocal on the subject of Agent Orange, also kept their silence. "What would ordinary people do with such knowledge?" as a retired medical doctor asked me rhetorically, at the time, Vietnam had no political leverage to do

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<sup>21</sup> Personal communication.

<sup>22</sup> Michael Martin, "Vietnamese Victims of Agent Orange and US-Vietnam Relations" (Congressional Research Service, 2009), <http://www.fas.org/sgp/crs/row/RL34761.pdf>.

anything about compensation from the Americans. They thought that without venue to express their grievance, such knowledge of collective experience had little use. When there was little practical use for such knowledge, unduly frightening the public or stigmatizing veterans, who were exposed to the chemicals during the war, seemed unwise. In a nation trying to make its ends meet, common citizens did not have the luxury of avoiding the risk of contamination, or politically mobilizing against the United States to claim compensation. While some physicians had independently made it their practice to tell patients about the possibility that their conditions were caused by the toxic chemicals, there was no concerted effort to inform citizens about the devastating effects of Agent Orange in Vietnam.

Toward the end of the 1990s, Le Cao Dai and other veteran revolutionaries of the two Indochina Wars began to think that it was time to address the issue of Agent Orange, which had been neglected for so long. With their rank aging, and Le Cao Dai also suffering from cancer, they saw it as their “last duty to the nation” to raise awareness about the victims of Agent Orange.<sup>23</sup>

In 1998, the Agent Orange Relief Fund was established at the Vietnamese Red Cross under Dr. Le Cao Dai’s leadership, and the task of ascertaining the health damage nationally began on a modest scale. Once the former vice president, Madame Nguyen Thi Binh, expressed support in the early 2000s, the movement gained momentum. In 2001, the Central Government’s Ministry of Labour, War Invalids and Social Welfare (MoLISA) began to offer limited support for some Agent Orange victims. Within a few years, the campaign spread nationwide.

As we have seen, VAVA was established in December 2003.<sup>24</sup> In January the following

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<sup>23</sup> Personal communication with one of the scientific advisors to VAVA.

<sup>24</sup> One thing to note, however, was that, as far as I can tell, these initiatives were not made in response to the demands of the victims themselves. VAVA, which represented the victims in the class action suit, was only established in December 2003, so it was hardly an established ‘victims’ organization’ before the litigation began.

year, the Vietnamese Agent Orange victims filed a class action lawsuit in the US court. By 2008, when I began my fieldwork in Vietnam, Agent Orange had become something virtually nobody was ignorant about.

### ***Reason for Politics***

Le Cao Dai and his associates rationalised their public awareness campaign by claiming that public ignorance about the health effects of Agent Orange aggravated the suffering of the victims. Psychosocially, the ignorance and superstitious beliefs of laypeople led to the stigmatization of the families of victims, which in turn led to their social isolation in the community (Le Cao Dai 2000). Agent Orange victims suffered from mysterious and often disfiguring diseases. In the rural areas of Vietnam, among Kinh people (majority Vietnamese), the idea of karma was still prevalent, providing a cultural framework for explaining misfortunes. Especially tragic were children born with birth defects, because it was believed that birth defects were the result of sins committed by their ancestors. In order to overcome the stigma and isolation caused by such mistaken beliefs, Le Cao Dai argued, it was necessary to spread scientific knowledge about the effects of Agent Orange.

There were also material and economic problems. Their chronic illnesses often made victims' and their family members' economic activities difficult, and many of them lived in poverty. Agent Orange was associated with a gamut of conditions from repeated symptoms of headache and backache to named biomedical disorders like leukemia and chloracne. But what came first in people's mind when they thought about Agent Orange was usually birth defect. As one VAVA staff said, "You can countenance with it if old people developing cancer. But generation after generation of children born with deformity, this is hard to bear." Psychologically and socially,

the effects of dioxin on unborn children had a large impact on the imagination of Vietnamese people. TV documentaries, newspapers, and other representations of Agent Orange victims often displayed children with terrible deformity. An article on *Tuoi Tre* on March 20th, 2008, for example, featured a photograph of three children who were born without eyes.<sup>25</sup> Stories like this often spoke of the hardship faced by the families of Agent Orange victims, and how the donations gathered in response to the articles had lifted them from their dire predicaments.

While these stories were meant to promote sympathy and community support for these victims, they also embodied another implication. Tine Gammeltoft (2007) suggests that the story of Agent Orange may have an implication for the biopolitics of the nation.

The political support in contemporary Vietnam for prenatal diagnostic technologies seems, then, to be nourished by a combination of compassion for victims of the long-term consequences of warfare and lingering fears that the dioxin sprayed over Vietnam has caused a lasting contamination of the *social body* that will render it difficult for the country to attain its development goals. (Gammeltoft 2007: 156).

The presence of disabled children exacerbated the economic hardship of the victims' families and the Vietnamese society at large in an already difficult post-war context. In 2003, Madame Nguyen Thi Binh told a reporter from the *Guardian* thus:

When the first child was born with a birth defect, they tried again and again. So many families now have four or five disabled children, raising them without any hope.<sup>26</sup>

The argument was that, had the victims been more knowledgeable about Agent Orange, they would have been able to take an appropriate measure to reduce the number of repeated cases of birth defects.<sup>27</sup> In fact, in places like Tu Du Hospital in Ho Chi Minh City, long before Agent

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<sup>25</sup> Tuoi Tre. 2008. *Cha me nuoi con bien ho lai lang*. *Tuoi Tre* 20 March 2008.

<sup>26</sup> Nguyen Thi Binh in "Spectre orange", *The Guardian*, 29 March 2003, (accessed on Dec 2010 <http://www.guardian.co.uk/world/2003/mar/29/usa.adrianlevy>).

<sup>27</sup> Such discourse was repeated in 2008 by people like the staff at VAVA.



Orange became a nation-wide issue, some physicians had made it their practice to warn parents about further conception if their children were suspected of being born with birth defects due to Agent Orange.<sup>28</sup> The idea was to extend this policy to a wider population, who would change their behaviours on their own accord to reduce the risk of giving birth to children with birth defects.

It was true that in many cases, parents who gave birth to children with disabilities went on to bear children without disability. For many of the parents, therefore, the possibility of giving birth to a healthy child who can take care of his or her disabled siblings was also a significant factor in reproductive choices. But children with birth defects were not only the source of grief for their families. They were also a burden to the community, and ultimately to the nation as a whole. For a country still trying to make its ends meet, the presence of non-productive members of the community was a hindrance to development. The government-sponsored Agent Orange payment alone amounted to fifty to sixty million dollars per year in 2009.<sup>29</sup> There were also medical costs and costs for rehabilitation, all on top of the loss of labour these victims otherwise would have contributed to the society.

The healthcare system of the Democratic Republic of Vietnam, which saw considerable success in wartime, began to face challenges by the late 1970s (London 2003, Wahlberg 2006). During the *Doi Moi* reform in the 1980s, the Government of Vietnam responded to the over-expanded medical system and the shrinking national coffer by introducing user fees. But this resulted in a large disparity in healthcare, especially between urban centres and rural areas. In order to rectify this problem, in the mid-1990s, the government began to launch programs addressing the healthcare of the poor. They built health facilities in remote mountainous regions

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<sup>28</sup> Personal communication with a physician in Hanoi.

<sup>29</sup> Personal communication with an ecologist in Hanoi.

inhabited by ethnic minorities, and in the 2000s, user fees were eliminated for communities designated as especially poor (Teerawichitchainan and Phillips 2008)<sup>30</sup>. Many of these communities were in the regions sprayed with Agent Orange. They were also places where many international organizations began to fund projects in the 2000s, drawn by the need of the ‘Agent Orange victims’ living in these areas.

As the state began to take pastoral responsibility upon itself to care for the people in these regions, quite possibly, the leaders of the government was also hoping to supplement its healthcare budget with donations from overseas. In a climate where ‘development’ was the word of the day, the discourse of the Agent Orange movement had to be framed such that this movement became, not a ‘hindrance for development’, but something essential for the development of the nation. In the discourse of the movement, therefore, the effects of Agent Orange were directly linked to economic conditions in a cause-and-effect manner. To disseminate scientific knowledge about Agent Orange was to reduce an economic cost borne by the nation and its healthcare system, because this knowledge could persuade the high-risk families to voluntarily take measures to reduce the possibility of giving birth to children with congenital defects. The increasing availability of prenatal screening technologies offered a compromise between the state and the desire of the parents, because they could now give it a go and conceive their babies, and abort, if severe defects were found in the fetus.

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<sup>30</sup> Bussarawan Teerawichitchainan, James F. Phillips 2008. Ethnic differentials in parental health seeking for childhood illness in Vietnam, *Social Science & Medicine* 66 (2008) 1118-1130

## ***Environment or Health***

The development mentality applied to the issue of Agent Orange is also evident in the shift in the Vietnamese government's priority from health issues to environmental issues.<sup>31</sup> In 2004, the responsibility to oversee research on Agent Orange was transferred from the 10/80 Committee to Office 33. The 10/80 Committee existed under the Ministry of Health, while Office 33 was under the Ministry of Natural Resources and Environment (MONRE). Although this change in the locus of steering committee did not mean that health studies were completely abandoned as a result, in 2009, the first priority of Office 33 was the remediation of 'dioxin hotspots' and the construction of a dioxin laboratory.

Since the end of the 1990s, a Canadian environmental consultant firm—Hatfield Consultants—discovered that while dioxin levels in the areas contaminated through aerial spraying of herbicides had been reduced to acceptable levels according to international standards, dangerously high amount of dioxin still remained in the former sites of US military bases. The US military installations in South Vietnam typically had higher contamination because they were heavily sprayed with chemicals from trucks or hand-held sprays during the war to secure the perimeter of the bases. Spillage from storage and reloading of the chemicals was also thought to have contributed to high concentrations of dioxin remaining there. Currently there are four designated 'dioxin hotspots' in South Vietnam, in Danang, Bien Hoa, Phu Cat and Nha Trang. In all these places a dioxin concentration of greater than 1000 ppt has been found.<sup>32</sup>

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<sup>31</sup> One reason is that people are no longer interested in epidemiological studies. A medical doctor from Hue identified 1986 as the transition year. With the economic reform policy, development became of an utmost importance. And many scientists gave up on the causation studies.

<sup>32</sup> A So airbase in A Luoi used to be called a hotspot, but it is no longer designated as such. The highest dioxin found there in the late 1990s was 901 ppt. For comparative purpose, the level of dioxins considered to be tolerable in countries like Canada is 350 ppt

Unlike the health hazard presented by Agent Orange, whose scope is indeterminate, the environmental contamination of the hotspots offered itself as a contained and solvable problem. In recent years, UNDP, the Ford Foundation and other international organizations have contributed funds toward the remediation of the dioxin hotspot in Danang airbase. Even the United States government, which has maintained reticence toward the compensation of victims, is apparently more willing to negotiate support for the environmental remediation (Palmer 2010).<sup>33</sup>

Currently, Vietnam spends about 50 million dollars each year on disability stipend for 200,000 veterans and their children for Agent Orange related disabilities; but as discussed in the next chapter, this support goes only to a limited number of people, and there is no prospect of resolving the problem at this moment.<sup>34</sup> Environmental mitigation, on the other hand, had relatively clear course of action with an expectation of results. It was also easier for the US government and funding agencies to provide support for projects related to environmental research and remediation.<sup>35</sup> As Michael Marine, the U.S. ambassador to Vietnam said to a reporter from the *Chicago Tribune*, the environmental remediation came with a “relatively easy argument to make that the U.S. should help to address this issue, [because t]here’s no question that there are levels of dioxin in Vietnam that are harmful, and there is no doubt that U.S. and South Vietnamese forces storing it there has had a cause and effect.”<sup>36</sup>

On the health effects of Agent Orange, the international scientific community continues

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<sup>33</sup> Obama administration has contributed 3 million for the clean up of Danang airport site in 2008 and promised additional 12 million. (Thanh Nien news, Aug 27, 2010, <http://www.thanhniennews.com/2010/Pages/20100827103604.aspx>)

<sup>34</sup> Statement by Ambassador Ngo Quang Xuan to the U.S. House Foreign Affairs Subcommittee of Asia, Pacific and Global Environment, June 2009, p. 3 ([foreignaffairs.house.gov/111/xua060409.pdf](http://foreignaffairs.house.gov/111/xua060409.pdf) accessed July 18, 2011)

<sup>35</sup> Incidentally, the Bill and Miranda Gates Foundation has donated 5.3 million dollars toward the dioxin laboratory, which is now under construction under the Office 33. (<http://english.vietnamnet.vn/social/2009/05/848334/>)

<sup>36</sup> Jason Grotto 2010 “Findings point new path for dealing with Vietnam War’s poisonous legacy: A Canadian firm says U.S. use of defoliants in Vietnam has left perilous dioxin levels, but that the issue is solvable.” [latimes.com/news/nation-and-world/la-fg-agent-orange3-2010jan03,0,6144418.story](http://latimes.com/news/nation-and-world/la-fg-agent-orange3-2010jan03,0,6144418.story)

to be divided even now; some scientists remained sceptical about pretty much any alleged health effects of dioxins (eg Gough 1997, Newton and Young 2006), while others were practically certain that it caused many grave illnesses (Schechter 2006, Galston 2001). But for the most part, scientists on both ends of the spectrum believed that more research was needed if final verdict on the toxic etiology of Agent Orange was to be made.

TCDD dioxin, the contaminant of Agent Orange, has been touted as one of the most toxic manmade chemicals. Its ability to produce birth deformities and cancers in laboratory animals has been demonstrated. But the effect of this chemical on humans, at the dosage any given population is exposed to it, is still uncertain. Epidemiological studies on Vietnam Veterans exposed to Agent Orange, and studies on occupational exposure in industrialised countries, have produced ambivalent results (Cole et al 2003, Newton and Young 2006, Institute of Medicine 1994, Schechter 2006). Research from Vietnam has produced more unequivocal odds ratios showing statistical association between Agent Orange exposure and various diseases. But many of the Vietnamese scientists I spoke to, knew that these studies were not up to international standard in terms of sampling and exposure measurement, and they largely agreed that it lacked in sophistication and robustness according to the ever-rising international standard. There was also a resigned feeling that no matter how much epidemiological evidence they could gather, it would not be satisfactory for Americans. Several people also mentioned that if they had money to do research, it would be better to give that money to people who are suffering from disabilities.

In 2005, the joint collaborative research initiative between the Vietnamese and American scientists—which had been in preparation since 2003—came to a halt. Some of the American scientists involved in the project cited ‘cultural differences’ and ‘bureaucratic barriers’ as the

sources of this failure (Butler 2005). Working on scientific research in Vietnam was not always easy for Western scientists. “It is a society of consensus,” said a Canadian scientist who had conducted research on dioxin in Vietnam. This was why it took a long time to get things like permits processed in Vietnam. “We never pushed,” he said. “Patience factor was immense. If you don’t have patience, don’t even go there. Frustrating? Yes. Get the result? Yes.” The Canadian scientist suspected that this was essentially how the joint program in 2005 collapsed; American scientists had limited cultural sensitivity.

David Carpenter, an epidemiologist from University of Albany offered another explanation. To a *Chicago Tribune* reporter, Carpenter said that he believed “neither government truly wanted the research to be done.”

The U.S. did not want to have examined what I think we would have found: that the herbicides cause birth defects, which would mean the U.S. would be responsible. [...] The Vietnamese didn’t want it because they’re blaming all birth defects on the herbicides, and that may not be true.<sup>37</sup>

Certainly there was much more that could have been done to study the effects of Agent Orange in Vietnam. Since the 1980s, some scientists have been arguing that the Vietnamese population presents itself as an ideal and precious resource for gaining greater understanding about dioxin and its health effects. However, as time passed by, the possible effects of Agent Orange became murkier. Combined with the politically-charged nature of dioxin studies—which also has implications other than Agent Orange related issues (see Chapter 7)—practical obstacles to health studies, such as the need for sizable and accurate health records and exposure assessment makes it unlikely for the controversy on its health effects to settle anytime soon.

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<sup>37</sup> Cited in Grotto, Jason. 2009. “Bickering blocks search for causes of congenital deformities”. The Chicago Tribune. December 08, 2009. ([http://articles.chicagotribune.com/2009-12-08/health/chi-agent-orange3-study-sidebar-dec08\\_1\\_vietnamese-joint-studies-environmental-health-sciences](http://articles.chicagotribune.com/2009-12-08/health/chi-agent-orange3-study-sidebar-dec08_1_vietnamese-joint-studies-environmental-health-sciences))

Most non-experts in Vietnam I interviewed were largely ignorant about this debate. When I mentioned it to them, many of them speculated that American scientists were biased and that they were not to be trusted. But ultimately, it appeared, most people in Vietnam were not interested in the precise effects of Agent Orange. Environmental contamination of dioxin hotspots were contemporary problem that continued to pose risk to the people living in their vicinity; toxic etiology of diseases and disabilities were issue of the past. In the larger context of postwar Vietnam, it made little sense to focus only on Agent Orange and ignore other sources of strife and suffering caused by the war.

### *Anatomy of Agent Orange Movement*

March 2, 2009, the litigation of the victims of Agent Orange in Vietnam ended when the Supreme Court of the United States declined to review the dismissal of their case by the appeals court the previous year.<sup>38</sup> It was an anticipated course of event. The odds were not very good for the Vietnamese plaintiffs to begin with. The plaintiffs and their supporters knew this, and still held on to the slight possibility of winning justice in the court of law. But they also understood that justice in a court of law was not the only purpose of the litigation, as one of the staff of VAVA said:

There is also a greater interest for other movements, whether it is the victims in the United States or peace movements around the world. It is also a part of our attempt to gather support for the victims.

Legal anthropologists have pointed out that litigation also has extra-judicial effects of attracting wide public attention. T. Keenan (2004), for example, argues that ‘mobilization of shame’ is the principal way in which the effects of international laws are achieved. The compliance

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<sup>38</sup> “Supreme Court won't review "Agent Orange" lawsuits”, Reuters, March 2, 2009  
<http://www.reuters.com/article/2009/03/02/us-agentorange-lawsuit-idUSTRE5213N120090302> accessed Feb 27, 2011

of governments and corporations largely comes from their wish to look ‘civilized’ in the eyes of the international community. Through the exposé of their questionable activities, states are reminded of the contradiction between their self-professed norms and their actions. “Light brings knowledge, and publicity brings ‘compliance,’ even if it works by shame and not reason or conscience” (ibid.:438). Thus, as Sally Merry puts it, “gossip and scandal are important in fostering compliance internationally as they are in small communities” (Merry 2006:101). Whether or not the chemical companies and the government of the United States are compelled in anyway by the Vietnamese Agent Orange litigation, it is undeniable that it had its effect on the visibility of the issue. It is also creating a network of people, such as peace activists and other Agent Orange victims—such as Vietnam Veterans in the United States—who also expressed solidarity with the Vietnamese victims.

One thing to note here is that the Agent Orange movement did not begin as an identity politics of the victims. The harbingers of the movement were members of the elites of the Communist order, who considered seeking the justice for Agent Orange victims their last patriotic act. Dissent in Communist Vietnam was only tolerated in principle; only those with impeccable revolutionary records like these elites could pull it off. The Agent Orange movement, therefore, began as a negotiation between these elites and the government at the highest level of the political and intellectual community in Hanoi. It did not begin as a politics of recognition, or the management of spoiled identity as Ervin Goffman (1963) might say. Thus by “Agent Orange movement”, I do not mean a kind of social movement with a coherent group of people with a unified purpose.

Sabrina McCormick and her colleagues (2003) call the kind of movements that lie at the



intersections of different movements, “boundary movements.” Straddling different social worlds, each with separate sets of actors, boundary movements blur the boundaries between different realms of knowledge and interests. I take the Vietnamese Agent Orange movement to be one such boundary movement. It consists of roughly three aspects: 1) justice, 2) knowledge, and 3) humanitarianism. The main focal point of the search for justice was the litigation *VAVA v Dow et al*, but not exclusive to it. There were also numerous conferences and civil society actions, such as the International People’s Tribunal of Conscience held in Paris in May 2009. The main thrust of this action was to force the United States government and the chemical companies like Dow and Monsanto to admit guilt and compensate the victims accordingly. This legal action and awareness-raising could be, in part, a form of identity politics. Some advocates of Agent Orange victims considered their contribution as a way to combat the stigma of victims and their disabilities. But the purpose of the movement also included greater emphasis and funding for research on dioxin, policy implications, and the people’s way of acting and being through the management of risk of dioxins.

The controversy over the nature and moral aspect of Agent Orange had a strong transnational element ever since the 1960s. The massive ecological destruction it wrought in Vietnam gave birth to a new category of crimes against humanity called ‘ecocide’ (as in *ecological genocide*) (Zierler 2008). Once the American ecocide in Vietnam was abandoned, for some, the Vietnamese experience with Agent Orange became a fable for a planetary scale ecological catastrophe<sup>39</sup> (like the “Fable for Tomorrow” in Rachel Carson’s *Silent Spring* (1962)). The only difference was that Vietnam and its destroyed forests and poisoned people actually existed on the

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<sup>39</sup> New York Times, April 25, 1971 “On the Planet Polluto”

surface of the Earth.

In the 1960s, for the chemical manufacturers like Dow Chemical and Monsanto Company, the vilification of Agent Orange was a premonition of decades of battle over environmental regulations to come. Soon after the fetotoxicity (toxicity for fetuses) of 2,4,5-T was made public in 1969, it became known that the culprit was its toxic impurity, tetrachlorodibenzo-p-dioxin (TCDD).<sup>40</sup> TCDD is known to be highly toxic, but it was also an unavoidable by-product of 2,4,5-T, which was used domestically in many commercial herbicides in the United States.<sup>41</sup> Thus when the US Environmental Protection Agency was established in 1970, the suspension of the registration of 2,4,5-T became one of the first battles fought between the Agency and the industry. This controversy (which continues to some degree in the United States even now) has contributed to continuing opacity around the health effects of Agent Orange.

### ***Methodology and Organization***

Why did the issue of Agent Orange suddenly appear at the turn of the twentieth century? How did moral obloquy against it develop in the 1960s? How did people living in contaminated areas experience the effects of Agent Orange in the post-war era? How was the introduction of new scientific knowledge about Agent Orange received and experienced by them? What does it mean to be a ‘victim of Agent Orange’ in the context of scientific uncertainty on the one hand, and increasing publicity about Agent Orange in contemporary Vietnam? How do nationality and citizenship construct biological identities such as ‘Agent Orange victim’? What effects did

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<sup>40</sup> Nelson, Bryce. 1969. Herbicides: Order on 2,4,5-T Issued at Unusually High Level. *Science*. 166

<sup>41</sup> More precisely, TCDD is a by-product of 2,4,5-trichlorophenol, which was the precursor of 2,4,5-T. This fact was first noted by the Givaudan Laboratory in 1939. The scientific evidence noting the presence of dioxin in 2,4,5-T and the toxicity of these chemicals existed since the 1950s. But such studies were less publicized. This issue will be discussed in greater detail in later chapters. (see Amended complaint *VAVA v. Dow et al*, Allen 2004)

scientific knowledge and the recent increase in interest about Agent Orange have on the cognitive and social life of Vietnamese people? And how do humanitarian aid workers cope with the uncertainty of the identity of Agent Orange victims?

With these questions in mind, I conducted thirteen-months of field research in Vietnam between 2008 and 2009. Open ended interviews with the families of putative Agent Orange victims, VAVA staffs, public servants, scientists and physicians, participant observation at various events organized by VAVA and visits to the families of the victims were the main methods of my research. I chose the families of the ‘victims’ to be interviewed by going through the list of people who were receiving government Agent Orange stipend provided by local People’s Committees, or through introduction of friends who identified the Agent Orange victims from their disabilities and diseases.

Geographically, my main focus was the A Luoi district of Thua Thien Hue province in central Vietnam, which was one of the regions sprayed with chemicals by Americans during the war. Located about 70 kilo meters southwest of Hue City (see Map II), A Luoi district is a highland valley originally inhabited by the Paco, Katu, Taoi and Pahy ethnic minorities.<sup>42</sup> Since the end of the war, A Luoi valley has received a migration of Kinh people from the lowland, who now account for one quarter of the population there.

At the turn of this century, Hatfield Consultant conducted an environmental survey of the district, and found dioxin remaining in the environment from the war.<sup>43</sup> Especially high

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<sup>42</sup> These names are sometimes written as *Pa Cô*, [Tà Ôi](#), *Cơ Tu*, and *Pa Hy*, but there are variations. For example, my research assistant wrote *Cơ Tu* as *Ka Tu*. I decided to omit both diacritics and the space between the syllables because when pluralized, *Pa Cos*, or *Ta Ois*, looks odd.

<sup>43</sup> There are many types of dioxin, including PCDD (polychlorinated dibenzo dioxin) and PCB (polychlorinated biphenyl) produced in many industrial and natural processes. Among them TCDD is a contaminant of Agent Orange.

contamination was found at the former site of the US A So<sup>44</sup> airbase at the south-western corner of the valley. As a result of this study, A So—or Dong Son<sup>45</sup> as the place is now called—came to be known as a ‘dioxin hotspot’, and this opened a new chapter of the legacy of Agent Orange in A Luoi Valley.

In addition to my field research in A Luoi, I also spent some time at the regional branch of VAVA in Danang City, which provided me with a glimpse into the works of people at the centre of Agent Orange movement in Vietnam. Among many local branches of VAVA, VAVA in Danang was one of the most successful local organizations supporting the victims of the Agent Orange in Vietnam. They operated two centres that provided daycare service for children with disabilities (thought to be caused by Agent Orange), and enjoyed a regular stream of donations and.<sup>46</sup> This research in A Luoi and at VAVA Danang was complemented with interviews with scientists, physicians, humanitarian workers and staffs at VAVA in Hanoi, with the purpose of understanding how the Agent Orange movement in Vietnam began, and how humanitarian aid for the victims of Agent Orange worked.

This thesis is divided into four parts. Part I is about the politicization of the issue of Agent Orange in Vietnam and its implications for the identity of the “victims of Agent Orange.” Following this introductory chapter on the beginning of the Agent Orange movement, in chapter 2, I discuss how scientific uncertainty and ‘differential citizenship’—differential access to state

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<sup>44</sup>In earlier writings A So is often written as ‘A Shau’.

<sup>45</sup> Đông Sơn

<sup>46</sup> This was largely through the personal prowess of the individual staff members, the geographical location, and the accommodation of the local government. Local media also participated widely publicizing the visits of notable celebrities and donors who made a significant donation, creating a symbiosis of market commercialism and humanitarianism.

resources based on different historical relationships of the family to the nation-state, in particular, the allegiance during the war—provide ambivalent grounds for biological identity of Agent Orange victims among the people of the A Luoi valley.

In Part II, I reel back history and discuss the historical development of the moral and scientific controversy over Agent Orange in the West, and its implications for the contemporary lawsuits brought to court by the Vietnam Veterans and the Vietnamese victims of Agent Orange. Chapter 3 is about the development of scientific paradigms that were integral to the development of chemical herbicides 2,4-D and 2,4,5-T. These ‘hormone herbicides’ were hailed as miracle herbicides in the late 1940s and the 1950s under the context of rising optimism about science and technology. Reflexive questioning of the role of science and technology by scientists was one of the factors that led to the condemnation of American herbicide program by Western scientists in the 1960s. This reflexive turn of scientists was combined with the rise of environmental consciousness.

In chapter 4, I discuss the development of the idea of ‘ecocide’, or ecological genocide that the Americans were purportedly perpetrating in Vietnam through the use of chemical herbicides. Since the time of the war, the question of whether the use of Agent Orange constituted ‘chemical warfare’ was a topic of concern both for the military and for anti-Vietnam War activists.

Should Agent Orange be considered a poison, a chemical weapon? Three decades later, in the Vietnamese Agent Orange litigation, *VAVA v. Dow (2004)*, it became clear that the answer to this question hinged upon the dosage of exposure and the knowledge the defendants had about the toxic effects of Agent Orange. Chapter 5 briefly summarises the history of a series of Agent Orange litigations and their stakes, and what the military and chemical companies like Dow and

Monsanto knew or did not know regarding the toxicity of Agent Orange.

In chapter 6, I argue that the main toxic effects of Agent Orange that people became concerned with belonged to new types of poison previous unaware by the public. In the 1960s, the idea of ‘carcinogenesis’, ‘teratogenesis’ and ‘mutagenesis’ surfaced in the public consciousness, along with the idea of poisons whose toxic effects were largely unintentional, had long latency up to decades, and manifested themselves in a statistical rise in the rate of certain diseases, rather than distinctive symptoms. Epidemiologists refer to these poisons as ‘risk factors’.

The scientific uncertainty and the moral obloquy against Agent Orange still remained in the 2000s, when I conducted my research. In Part III, I return to the discussion of my field site in A Luoi valley in order to discuss how people affected by Agent Orange have come to know and experience its effects since the end of the war. In chapter 7, I discuss the issue of etiological knowledge about the effects of Agent Orange and what confounded this knowledge in post-war A Luoi. The introduction of the knowledge of toxic effects of Agent Orange was accompanied by the knowledge of risks of dioxin. How this new knowledge of risk has affected the local people’s perception of their land, food and family is the topic of chapter 8. Chapter 9 continues with this discussion on risk perception focusing on the encounter between outsiders and the local people of A Luoi.

In Part IV, I explore the experiences and the construction of Agent Orange victims from the perspective of humanitarian aid. I discuss the relationship between the representation of victims and the double-bind experienced by humanitarian activists who are bound to the expectation of the donors and the local reality of Vietnam in trying to bring aid to the putative victims of Agent Orange.

The reality of the hazards of Agent Orange I saw in Vietnam appeared fragmentary and perplexing. On the one hand, there was the concrete experience and suffering of Agent Orange victims, which turned out to be mired in uncertainty; on the other, there was the abstract current of history and the discourse of movement, which seemed to yield a deceptively coherent story. To concoct some sort of ‘knowledge’ out of these two incompatible levels of messy reality and comprehensible knowledge is perhaps the challenge for all anthropologists. To tackle this problem, I decided to include short interludes between some of the chapters that are designed to discuss particular topics. These interludes are somewhat external to the chapters that precede and succeed them, and they are not intended to provide or contribute to a coherent knowledge. Rather, these stories are intended to give the readers fleeting glimpses into the lives of the people affected by the Agent Orange legacy in Vietnam.

“The floor, it’s just been mopped. Don’t come in here. You’ll get your socks wet,” Binh said as I stepped into the back room of their house. The cement floor of the room was still glistening black with dampness. On the nearside of the wall to the left of the door, there was a wooden cot which made up Thuy’s bedroom, and on the farthest side of the wall, there was a gas stove and a sink, which made up the family kitchen.

Slightly relieved to be given an excuse not to go in further, I perched on the wooden doorsill and looked over into the dark room. Binh was cooking something on the stove at the other end of the room below a flickering fluorescent light. Her twenty-one year old daughter, Thuy, was squatting on her tiny feet, hugging her skinny short legs on the bamboo mat where she spent most of her days. A blue mosquito net was folded neatly above her head. There was always a stench of excreta about the room whenever I visited, and I imagined other foreign visitors who came to observe her would not have failed to notice this either.

“How are you today?” I said looking toward Thuy.

“Bah! She wouldn’t understand anything”, Binh said, as she scrambled about in a drawer to look for her husband’s phone number. Thuy began to rock her potato head, and started to spurt some bumbling noise through her puffy lips. There was no recognizable expression in her face. There never was, as far as I could tell. Under the blue fluorescent light, she looked unreal, like a character out of a horror movie. She was a typical Agent Orange victim: bed-ridden, disfigured.

Binh moved away from the stove and sat beside Thuy. “Oh, she doesn’t understand anything. You don’t understand anything. Do you, Thuy?” she repeated slowly, smiling at her daughter with the side of her mouth as she patted her daughter’s pimpled head gently, and Thuy



returned a blank face. Thuy usually lay on the bed all day long (often in her own waste and sweat) while Binh sold second hand clothes at the market, and her husband, Quynh Thi went around on the business for the Commune, or more recently, for the newly-established A Luoi branch of the VAVA. Because she lay in one position for so long, the skin on Thuy's shaven head and her side often became ulcerated and infected. Each time the ulcers broke and pus ran down her skin, Binh would wipe them clean and rub medicated ointment on the wound, so that it became healed and dry again. One time, the pot of charcoal Thuy's sister placed under the bed in order to keep her warm during a cold winter night got too hot and scalded Thuy's skin. Binh remembered rubbing the ointment on it until it healed clean. She was proud of Thuy's clean skin. She also knew how to massage and stretch Thuy's muscles so that she will not become permanently stiff. Binh cleaned Thuy's body with a wet towel every afternoon when she returned home from work, and gave her a bath every other day.

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*June 3rd, 2009. BBC online runs an article on how an increasing number of premature babies are now surviving because of developments in technology.<sup>1</sup> In countries like Sweden where intensive care is well-developed, 70% of the babies born between 22 to 26 weeks of gestation survived past the first year of their life. But the problem was that half of these babies who survived ended up with serious health problems. This story was followed with a cost-benefit discussion on letting these children survive. Given developments in technology and standard of living, the chance of survival for babies born with prenatal problems increased.*

*A similar situation was emerging with children with birth defects in A Luoi. In the*

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<sup>1</sup> "More premature babies surviving", BBC news online, 3 June 2009. (<http://news.bbc.co.uk/2/hi/health/8078911.stm> accessed 5 June 2009)

*hardship of post-war period, most infants with severe birth defects died. Later, a few survived. As the condition of life improved in A Luoi, more and more children like Thuy survived; which also meant that they stuck around like a reminder of disharmony in their life. There was a cruel and difficult question I dared not ask: why care for a child who has no future?*

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“She was only *dau*<sup>2</sup> at first, you know, fever,” Binh said in an interview at her second-hand cloth stall at the market a couple of weeks later. “She had a high fever. And we took her to the hospital, and the doctor also said that she just had a fever. We thought her fever will decrease in no time, but in the end, she had a fever for the entire month.

“It was around noon that she began to complain. She was *dau*, so she cried. I tried to give her milk, but she wouldn’t suckle. So I took her to the hospital here. For the entire month, she was constantly *dau*. It didn’t get better at all. She became stiff and we thought she was going to die, but she lived. She had fever for almost two months. The doctor gave her an injection, and the fever slowly receded, but still, she didn’t get better. The doctors said that they can’t cure her. That’s when the doctor said that she was probably affected by—what-you-may-call-it?—*chat doc*,” she said emphatically. ‘*Chat doc*’ meant ‘toxic agent.’

“Because I had another child like this one and the doctor remembered it—the former child had been in the hospital for seven months. And after he had been home for three months, he died. He was about one and a half, because he got sick when he was about eight months old. He lived only for twenty months or so.

“This time she was also in the hospital for almost a year, but never recovered. It’s been

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<sup>2</sup> ‘*dau*’ can be translated as ‘pain’ or ‘being in pain’. But it is also used to describe any physical discomforts such as minor aches and nausea.

twenty-one years now. Never recovered,” Binh spoke on without betraying any discernible emotion.

“When I took the first child to the hospital, the doctor didn’t say anything about *chat doc*. Didn’t hear anything about the chemicals with the first child, Thang. It was when the second one was born that the doctor remembered the first one and said, ‘how come you are having so many problems with having babies? Did your husband go to war? Where did he go? Maybe it’s the effect of the chemicals’ and so on. If there were only one baby like this one, you wouldn’t think of it twice. But two babies like this?

“I didn’t think she’d live long. Doctor told us that he couldn’t cure her. ‘Give her whatever she wants to eat. Let her live as long as she can.’ That’s what he told us when he discharged her from the hospital. Don’t know when she’ll die, but her problem will persist until then. In the first case, the baby died in three months. The second case, this one is still alive. When the baby came home, her fever was gone. After a month, her fever was gone, but she still didn’t recover from it.

“It’s sad, but I can only accept it. I’d still raise her. When we left the hospital, the doctor said it might turn into the source of strife for the family. She might live for a long, long time. Until then, give her food she wants to eat, drinks she wants to drink; let her live as long as she can. But she might turn into a source of strife. She will not become agile and smart like other kids, go to school, and so on. You will have to give up hoping that she can go to school. That’s what the doctor told us. Just give her whatever she wants to eat.

“It was sad. If your kid gets out of the hospital, you’d expect she’d have been recovered, and can go to work; can go to school. But with this one, she was discharged from the hospital, but all she can do is to stay in one place. So I cried and said to the doctor, my child is being discharged,

but she isn't any better. And he said: she won't recover. She's been on her back for too long, you can't let her lie on her back for too long.

"There used to be lots of kids like this around here, but they all died because their parents didn't take care of them well. Many of them died by ten or twelve. They used to gather us at the hospital or at the temple to give the disabled children like this gifts. There were many. But year by year the number decreased. All died. There was a child like mine at the hospital once. There was one in the district centre like this one too. They came to film and photograph the child, but he died. If you don't care for them well, they would die. So many children died because they weren't cared well enough. I gave Thuy whatever she wanted, using the little money we had. If she liked *banh trung*,<sup>3</sup> I buy it for her. Milk. Bananas for desert. She eats a lot. She can finish one big bowl of rice."

Suddenly, there was a large crashing noise outside the market and a commotion as people gathered around the scene. Binh rushed out to check out what was going on. Until then, she talked almost non-stop. Once in a while, she would call out to potential customers who came through and sifted through the pile of clothes, or gazed at the ones hanging from the ceilings like drapes. But most of them glanced at my voice recorder and left without buying anything, and I knew that my presence was losing her business.<sup>4</sup>

Binh was reluctant at first when I showed up at the market and asked her if I could interview her. "You should ask Quynh Thi, he would know more", she complained, perhaps,

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<sup>3</sup> Glutinous rice wrapped in banana leaf.

<sup>4</sup> I could have done the interview at her house, but I wanted to do some interviews away from her daughter, although she probably did not understand anything.

slightly feeling shy about being singled out by a foreigner in front of her friends at the market.

Indeed her husband, Quynh Thi *did* know a lot about Agent Orange. He was certainly more involved politically with the wider Agent Orange movement, and he knew how people were trying to gain recognition for the victims. But this was a new development in the past year or two.

One of the first times I met Quynh Thi in 2008, I asked him about the kind of things the families of Agent Orange victims needed. He answered that personally he wished he had a device to collect rainwater so that he can use it to wash Thuy and her bedding. All day long, Thuy and many other children like her stay at home on their bed, alone. At lunch time one of the family members would come to feed her, he said. But other than that, all the cleanings had to wait till her parents were back from work in the afternoon. Water was essential for cleaning away all the waste that was let flow during the day. It was a practical and modest wish of a family who had to care for someone like Thuy in places like A Luoi.

But that was a year ago, when VAVA in A Luoi was still only a budding idea. A year later, in 2009, Quynh Thi's response was quite different.

In the summer of 2007, Quynh Thi was invited to Hanoi to represent the victims of Agent Orange in A Luoi at a general meeting of the representatives from local branches of VAVA. At the time, there was no VAVA in A Luoi, so upon returning home, Quynh Thi began to speak to his friends about establishing a branch. In May 2009, after a long delay due to bureaucratic negotiations with the province, the inaugural ceremony for the A Luoi branch of VAVA was finally held.

During my stay in A Luoi, the activity of the VAVA in A Luoi never took off. But in the one year that I have known him, Quynh Thi's perspective toward the issue of Agent Orange

seemed to have changed dramatically. In 2009, he spoke of the need for the rehabilitation and care centre for children like Thuy, although, he said, there was the practical problem of transporting the children there each day (which was something I also heard at the VAVA in Danang City). He spoke of justice and compensation, although (like the representatives of VAVA in Hanoi also said) he did not wallow in hatred and make accusations against the Americans.

After a year of working toward the establishment of the A Luoi branch of VAVA, Quynh Thi seemed to have acquired the language of the movement. He also appeared more confident about his role as a representative of the victims of Agent Orange in A Luoi, and he seemed more enthusiastic about seeking justice in the global arena.

His wife, Binh, on the other hand, left these politics largely up to him. Binh, who had only lived with its consequences, did *not know* much about Agent Orange. Quynh Thi was the harbinger of the Agent Orange movement in A Luoi, which had already been riling the nation for the past five years or so.

Four decades after the war, 'Agent Orange' finally landed in A Luoi Valley at the margin of the Vietnamese nation state, and Quynh Thi had emerged as some sort of a local expert on the issue of Agent Orange.

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Quynh Thi suddenly turned toward the television as the newscaster began to speak about the International Court of Opinion that was being held in Paris. There was still a pot of squash soup on the mat spread on the floor. With a bowl of rice in his hand, his chopsticks in midair, Quynh Thi stood up and walked toward the television to hear more closely what was being said amidst the havoc his granddaughters were making in the room.

Recently, Quynh Thi has become a lot more enthusiastic about being part of this larger movement for the welfare of Agent Orange victims. Just about a month ago, he had told me excitedly, “It looks like I’m going to Paris, as a member of a delegate to the International Court.” The court case that was going on in the United States since 2004 had come to an end in March of 2009, with the Supreme Court of the United States rejecting the plaintiffs’ appeal. But in order to demonstrate to the international community that the issue was not dead yet, the International People’s Tribunal of Conscience in Support of the Vietnamese Victims of Agent Orange was organized by the International Association of Democratic Lawyers in Paris, in May the same year. As the head of the newly established branch of VAVA in A Luoi, Quynh Thi was supposed to be included in the delegation to Paris. So the people in Hanoi had told him, at any rate. He had still believed this up until a couple of days before the tribunal was supposed to take place. But the delegation had left the country without him. I supposed there was some misunderstanding between someone at the VAVA in Hanoi and Quynh Thi, but it was still disappointing for Quynh Thi.

“I now got the passport. Next time I will go abroad,” he said optimistically.

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Many people in A Luoi had seen the news about the International People’s Tribunal on television. Phuong, whose daughter, Nhue, was disabled, had seen the news on television, and was glad that the Tribunal recognized the responsibility of the United States, but lamented that it did not lead to compensation. “Even one billion dong [approximately \$60,000 USD] would be enough, because she will never be normal. I wished they were both normal like this one,” she said, and pointed at her five-year old son, Dat, who had just come in.

“There are ones much worse than this in A Ngo. Have you met them? There was one on

TV some time ago,” Phuong said, as she rubbed and stretched the small hands of her daughter in her lap. “At least this one is lucky because she can tell us if she wants to go to the bathroom.”

“With this one around, at least one of us has to stay home,” Phuong said, as her daughter wiggled her stiffened body and Phuong pulled her closer to herself. She thought that some parents did not take care of their disabled children. They were often not at home, and while the parents stayed away from home, their kids peed and shat in their cloth.

“You know Quang just down the street, right? His parents are always out. If they exercised him more, he would have been able to walk. But nobody takes care of him.”

I was about to complain that it was not true. I had spent a fair bit of time with Quang’s family, and they seemed to me like a very caring family. Besides, Quang did not shit his pants. But I refrained from saying so. After all, I was an anthropologist.





Map of Thua Thien Hue Province and A Luoi Valley (Google maps)

## CHAPTER 2      CITIZENSHIPS AND BIOLOGICAL UNCERTAINTY

“Mom and Dad are in the backyard. They are building a stable!” Quang stood with a huge smile on his face, resting his hooked hands on the frame of glass-less window where he spent much of his days while other kids of his age were at school. A flock of brown chickens scattered as I walked into the courtyard under the canopy of a jackfruit tree. A ray of sun leaked through the foliage and lit Quang’s face, and the contrast between the darkness inside and the turquoise façade of the house framed Quang’s face like a portrait.

A few days before that day, Quang’s mother Linh had told me with a gesture with her chin toward her son: “They are giving us a buffalo, because this one here is, you know, Agent Orange.”<sup>1</sup> Quang, who stood hanging with his hooked hands on the seat-back of a heavy wooden chair his father had built, looked up at us timidly and then looked down again at the floor, as if he did not know what to make of this announcement. I could never tell what children like Quang thought about being called an ‘Agent Orange victim’, and I did not know how to ask a question like that.

It was about a year ago that my friend Phai had brought me to meet Quang’s family, saying that he would introduce me to an Agent Orange victim. Phai taught Vietnamese literature at a local high school, but he was also an amateur ethnologist researching the folk traditions of ethnic minorities in A Luoi. On the side, he also had a project to record the stories of Agent Orange victims in A Luoi. Riding our mopeds along the unlit Ho Chi Minh trail in the night breeze, we arrived at Quang’s house in darkness. With Phai’s prompting, I interviewed Linh with my clumsy

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<sup>1</sup> People often referred to Agent Orange victims as just ‘chat doc’, literally meaning ‘toxic agent’.

Vietnamese, and somehow managed to record her bullet-speed story on my voice recorder. Ever since, I saw them from time to time on casual visits on my way back from my main field sites at Dong Son and Huong Lam<sup>2</sup> communes adjacent to the dioxin hotspot at the former US A So airbase. During this entire time, except for the very first time I met the family and interviewed them, it seemed, neither Quang nor his parents mentioned the word ‘*chat doc*’,<sup>3</sup> which was the word local people usually used to refer to ‘Agent Orange.’

This was why it caught my attention when Linh used the term “*chat doc*” to describe her son. The year previous—despite the fact that Phai had brought me to meet an ‘Agent Orange victim’—Linh seemed a lot less certain about whether Quang was really a victim of Agent Orange. Quang certainly had a physical disability. His hands stiffened like hooks, and his clubbed feet made it difficult for him even to stand on his own feet. Many people who knew him probably saw him as an Agent Orange victim nowadays. Then why did Linh seem so hesitant about telling me that Quang was an Agent Orange victim?

For Linh, one source of uncertainty was that Quang was not receiving the government Agent Orange compensation,<sup>4</sup> which Agent Orange victims were supposed to be receiving. The reason was simple: neither of his parents had participated in the war of national liberation.

### ***Differential Citizenships***

In Vietnam, I often heard people say “close the past and open the future.” Invoking the Mongols who invaded Vietnam in the thirteenth century, they would say with humour: “Vietnam is a small country. So even after we defeated the super powers like America, we bow to them and ask

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<sup>2</sup> Huong Lâm

<sup>3</sup> chất độc

<sup>4</sup> In Vietnamese this Agent Orange disability scheme is called chế độ chất độc

for their friendship afterward.” This insistence on forgetting the past actually displays the ambivalence Vietnamese felt toward their past. The echo of the past lurks in many corners of the society in the forms of barred opportunities and unspoken opinions of a people who were not favoured by the history because of their questionable wartime allegiance to the Communist regime.

In this context, perhaps, the problem of Agent Orange had to be framed not only in terms of reckoning with past injury, but with future development in mind. On several occasions, I heard people say that the problem of Agent Orange presents an opportunity to get past grudges and misunderstandings of the past. Agent Orange indiscriminately harmed enemies and allies alike. Americans, Vietnamese, South Vietnamese soldiers and the Viet Congs—all suffered from the effects of Agent Orange. There was a common enemy of corporate greed and American militarism. The call for peace was a banner under which all could unite.

In terms of scientific knowledge and the movement for justice, people of different nationalities across oceans seemed to operate more or less in sync. For example, a cohort study of the American soldiers exposed to the herbicides would be recognized by Vietnamese scientists and people at VAVA as something relevant for other groups of Agent Orange victims.<sup>5</sup> The compensation scheme for Agent Orange victims in the United States was also seen in Vietnam as something representing the US government’s scientific understanding of the effects of Agent Orange had on Vietnamese. Furthermore, as one of the VAVA staff noted, in recent years, the issue of Agent Orange had resurfaced around the world as both Vietnamese and American litigations began. He said:

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<sup>5</sup> Institute of Medicine (U.S.). Committee on the Disposition of the Air Force Health Study. 2006. Disposition of the Air Force Health Study. Washington, D.C. : National Academies Press

Many people, like the American veterans, Australians, Koreans and New Zealanders began to voice their opinions against the chemical companies. In places like Colombia, people are starting to express concerns about the possibilities that the herbicides Americans used there might have had hazardous effects for human health too.

The legitimacy of the grievances of Agent Orange victims in Vietnam was sought in and was sustained by a transnational knowledge space and solidarity. However, the issue of Agent Orange also rendered the differences between different ‘nationalities’ (or former nationalities) salient in many cases.

Take for instance, a story by K. Oanh Ha: “Speaking Out After Decades of Silence.”<sup>6</sup> A former South Vietnamese soldier, Luc Nguyen, and retired four-star general Louis Wagner fought together amidst the chemicals in wartime as allies. Now they share the same disease: prostate cancer. Luc Nguyen moved to the United States when Saigon fell to the Communists. Now they are both the citizens of the same country. But while Wagner receives his monthly compensation as an Agent Orange victim from the Veterans Affairs of the United States, Luc Nguyen receives no recognition as a victim of Agent Orange from the United States government.

This differential access to the recognition as ‘Agent Orange victim’ depending on the individual biographies also exists in Vietnam. In 2001, the government of Vietnam issued a decision to support victims of Agent Orange. The decree was often known as ‘Agent Orange system’ or ‘benefit’.<sup>7</sup> Under this compensation scheme, victims of Agent Orange were able to receive stipend of a maximum of 100,000 dong (about \$8USD) per month depending on the gravity of their disability.<sup>8</sup> The individuals who were able to receive this benefit were: “military

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<sup>6</sup> K. Oanh Ha. “Speaking Out After Decades of Silence.” The California Report. 22 Nov, 2010. (<http://www.californiareport.org/archive/R201011220850/a>, accessed August 2, 2011)

<sup>7</sup> Officially it is called, *Chế độ chính sách đối với nạn nhân bị nhiễm chất độc da cam*.

<sup>8</sup> QD 26/2000/QĐ-TTg (downloaded from <http://laws.dongnai.gov.vn>). The amount in 2009 was about 680,000 dong.

cadres and soldiers of the revolution, civilian Party cadres, and youth volunteers who served in the area sprayed with the toxic chemicals by the Americans.” Their children who were born with birth defects were also eligible to receive the benefit at a reduced rate. To this list of eligible recipients, in 2004, civilian collaborators of the Communists were added.

Among the potential Agent Orange victims, the individuals this legislature excluded were civilians who lived in the regions sprayed with chemicals during the war, and the South Vietnamese soldiers who served in these regions. Like its American counterpart, the Vietnamese government conceived this compensation scheme as a social security measure for veterans who were suffering from service related disabilities, rather than for the damage caused by the chemicals per se. It also meant that this law compensated only for exposure during the war; environmentally mediated exposure in the post war era was not covered by this benefit.

This restriction was why Quang was not eligible for the state sponsored Agent Orange benefit. Quang was born in 1995, long after the end of the war. His parents were both Kinh people from the lowlands. His mother, Linh, came from Quang Tri province to A Luoi as a member of Youth Labour Troop organized by the Party in the 1980s. His father, Thun, came from Quang Dien district in Thua Thien Hue province as a labourer in the early 1990s. Both of them were born in the wartime, but were too young to have actually participated in the war. They also had no experience of being directly exposed to Agent Orange, although they lived most of their life in contaminated regions.

“They say that Hong Thuong [the village they lived in] is also contaminated with dioxins because it is close to the [US] Ta Bat airbase. So it’s possible. But who knows?” Linh muttered when I asked her about Quang’s disability and Agent Orange. But she had never made a claim with

the local government on behalf of Quang to obtain the Agent Orange disability benefit. Under the current compensation scheme, whether his disability was caused by Agent Orange or not was irrelevant. He was simply not eligible for the Agent Orange benefit on a point that was not negotiable, which was his parents' history of participation in the war.

It is often forgotten that while the Vietnam War was a war of independence against Imperial America, it was also a civil war that divided the nation. This legacy of the civil war is still present in many aspects of life in Vietnam. The differential Agent Orange benefit spoke to the fact that in the post-war Vietnam, there were at least two types of citizens: ones who fought for independence and those who did not. These distinctions remained in the society in many subtle ways in the post-war Vietnam. Every citizen had a record of his or her family history<sup>9</sup> stored at the People's Committee in their home village, which could be referenced if, for example, the individual sought a government job or teaching post away from home. Although the power these records had on the lives of the people (whose historical allegiance to the Party was questionable) was lessening, many people I have talked to in 2009 still spoke of discriminations based on their records.

### ***“Saving our country”***

In 2009, the plan to build a museum of chemical warfare in Dong Son was under consideration. If it is indeed carried out, the entire eastern part of the former airbase would be used for the museum. “Dong Son is a typical case of dioxin hotspot in Vietnam,” explained a retired ecology professor in Hanoi. “That is why we are building the museum there. Almost 80% of the spraying of these chemicals took place in areas inhabited by the ethnic minorities.” Dong Son was

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<sup>9</sup> lý lịch

a special place, because the dioxin hotspot found in the former US A So airbase was located there. It was also the first site in which Hatfield Consultant discovered a high level of dioxins remaining in the environment long after the war (see chapter 1).

There was nothing to envy about living in the vicinity of a dioxin hotspot, I imagined. The soil there was terrible: unsuitable for agriculture and forestry. The locals had to worry about the risk dioxins posed to their health. To my surprise, however, in the course of my fieldwork, I discovered that people living in the vicinity of the area seemed to covet the site of the A So airbase. People of Dong Son spoke about how *they had* A So airbase. People in the neighbouring Huong Lam commune insisted on making the point that they had lived near the A So airbase longer than the people in Dong Son, who resettled there *only* in 1991. “People of Huong Lam know about this place better,” one woman said, “and we have suffered longer.”

In my country, Japan, I thought, people would try everything *not* to draw attention to their poisoned land. Say, in Minamata, where there was mercury poisoning in the 1950s, many resented the fact that their town became permanently attached to the name of a hideous disease, ‘Minamata disease’. Some of them wanted to keep silence on the problem they faced for fear of stigma such stories of poisoning may bring. But they willy-nilly raised their voice because they felt it was the only way to claim justice. People’s sentiment toward the A So airbase, on the other hand, seemed to be something different. Something more akin to pride.

I suspected their claim to the A So airbase had something to do with the material benefits that came with being recognized as the ‘inhabitants of a dioxin hotspot.’ But it seemed there was also something else. When I discussed this with my friend Phai, he said immediately: “Of course! It is a national heritage site.” In order to understand this sentiment, we need to look at the particular



historical relationship ethnic minorities of A Luoi have had in relation to the Vietnamese nation-state.

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Nestled within Truong Son Mountain Range bordering Laos and Central Vietnam, A Luoi is a highland valley located about seventy kilometres northwest of the old imperial capital of Hue. Despite its proximity to the centre of power, for centuries the inhabitants of A Luoi lived largely outside Vietnamese civilization of Kinh people.

Historically, the dynasties of Kinh people approached the ethnic minorities living on the borders to the north, west and south with distinctive attitudes (Furuta 1995: 27-35). The northern border, beyond which lay the mighty Chinese empire, was a border of defence. The ethnic minorities living in the highlands in the Northwest, such as the Tay, Thai or Tho<sup>10</sup> ethnic groups were often coaxed into becoming the vassals of Vietnamese dynasties, and offered a buffer between the Chinese and the Vietnamese. The southern border was a land of continual expansion. The Vietnamese civilization typically expanded along the coastal planes, conquering Cham and Khmers as it marched southward. The western hills, however, were largely uninteresting land for the Vietnamese, who were essentially a plains people.

Things began to change around the turn of the nineteenth century in the time of French colonialism. To the south of A Luoi valley, in the Central Highland around Dak Lak,<sup>11</sup> the French established plantations. To the north of A Luoi, they built a road to Lao Bao<sup>12</sup> in Quang Tri province in 1904 in order to better access Laos, then a part of French Indochina (McElwee 2008). They also brought up Kinh people from the lowlands to places around Khe Shan in Quang Tri

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<sup>10</sup> Tày, Thái, Thổ

<sup>11</sup> Đắk Lắk

<sup>12</sup> Lao Bảo, Quảng Trị

province to work in coffee plantations.

But in A Luoi itself, French had very little presence. Kinh majority also had very little influence there. Pamela McElwee (2008) attributes this to the difficult landscape to navigate and the lack of agricultural opportunities in A Luoi. But it was also reinforced by the fear the Kinh people and the French had toward the local people's military prowess. The Taoi people were known as vicious slave raiders in the nineteenth century, and their trade route extended all the way to Phnom Penh and Bangkok, where one could find Kinh slaves sold in the local markets (Ibid). The Katu people were known as 'blood hunters', seeking human blood sacrifices. It is even reported that the Nguyen Dynasty had organized "Chu Yen or Acceptance Ceremony in hope of bribing the Katu to refrain from these raids" (cf. McElwee 2008: 93).

Thus in A Luoi valley, the local ethnic groups of Taoi, Paco and Katu people<sup>13</sup> lived in relative independence from the Vietnamese nation, growing hill rice and manioc on the hills and hunting game in dense jungle of the valley. Today, route 14, or otherwise known as the Ho Chi Minh route, extends the entire length of the valley. Rice paddies spread along the western side of the road following the A Sap River's basin where the valley widens at the midriff of the district. Some of the houses with dark wooden façades typical of this region would also have the red national flag of Vietnam swinging on a pole in the front yard, reminding visitors that this region was also called the 'land of war heroes'. But until the Second Indochina War, the local inhabitants had very little interaction with Vietnamese civilization and its Kinh majority. Once in a while, they came down to the lowland to trade for salt. Other than that, they lived in relative independence.

Then the wars came.

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<sup>13</sup> There were also Pahy people who lived closer to the lowland near Kinh people. They spoke a language similar to Paco, but also spoke Vietnamese.

The French came. The Vietnamese came. The Japanese also came (presumably as Viet Minh mercenaries, since World War II was already over by then). To the locals, it mattered little who they were. They were, in a sense, all foreigners. “The only difference was that the Viet Minh returned year after year, and some of them learnt our language,” said Quynh Tam, one of the elders of A So village.

The war with the French ended in 1954 with the Geneva Peace Accord, which divided the country at the 17th parallel, just north of A Luoi, into the Communist North led by Ho Chi Minh and the Republican South under American patronage. At first there was an agreement between the two parties to hold a general election within a year for a unified Vietnam. This election, however, never came to be—boycotted by the Americans who feared that Ho Chi Minh may take power through legitimate means (Kolko 1985).

Soon, both sides began to ready themselves for another war. The Viet Minh cadres who came up to A Luoi during the war with the French continued their recruitment there throughout the 1950s. Some locals—like Quynh Dat’s and Quynh Loc’s fathers—embarked upon, what Benedict Anderson (1983) has called, ‘pilgrimages’ to Vietnamese citizenship.<sup>14</sup> They collaborated with Viet Minh cadres, guiding them, travelling with them throughout central Vietnam, meeting people of many sorts and breeds, whose only commonality was that they were all ‘Vietnamese’.

Very few people of A Luoi spoke Vietnamese back then. Whoever knew some, didn’t know much. “Once, when I was in Hue with my father as a child to buy salt, someone came to us

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<sup>14</sup> In *Imagined Community*, Benedict Anderson (1983) talked about how the journey taken by the national elites in colonies like French Indochina to schools in cities like Hanoi and Saigon, or even to colonial metropole like Paris, gave rise to national consciousness. This journey, Anderson called, ‘pilgrimage’.

While the journeys taken by the ethnic minority people of A Luoi took them to places closer to their home than pilgrimages of taken by the national elites of the early nineteenth century (sometimes it took them to Hanoi and even as far as China), it still had similar effect of creating sentiment of belonging to a nation.

and asked for a street,” said Quynh Dat. “They were saying ‘which street?’ but we thought they were saying ‘cat’. We thought that they wanted us to catch cats from the forest and dry it and sell it to them. There was also the time when we went to ask for food. We wanted to ask for fish, but we didn’t know how to pronounce the words correctly. So instead of asking for *cá* [rising tone] (fish) we ended up saying ‘please give me *con cà* [falling tone] (penis?)”

Quynh Dat, a former village headman of A So village, often traveled with his father to Hue City as a child to trade for salt. People of A So were Katus. Their neighbours, Taoi people, had *gieng* cloth, which was a traditional cloth woven out of cotton (usually died black) with beads laced into the textile in patterns. The local people of A Luoi wore them, including some of the Katu people, especially on ceremonial occasions. But Katu people did not know how to weave them. People of A So village had few commodities to trade with other people around them. In Quang Nam, Katu people made pottery, but in A Luoi, clay suitable for pottery could not be found. So the only thing they could trade for these commodities were either their cattle, or more recently, salt they bought from Kinh people.<sup>15</sup>

“We didn’t have money to buy cloths. Only salt. Salt and machetes. Machetes to clear the field. Not for harvesting. Because we weren’t allowed cut the stalk of the hill rice, cassava or corn because spirits resided in them.” Rice was harvested in May, so it could be dried in the sun. In the fall they harvested cassavas, when the soil was soft enough that they could be simply pulled out of earth. Aside from their brief trips to the lowland, they had few interactions with the Kinh. Life went along placidly as usual.

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<sup>15</sup> They made trips to Hue City three times a year. The first trip was made to buy salt to be traded with other people. The second was for both use at home and for sales. And the last trip just before rainy season was for our use at home. Once the rainy season came, they could not pass the mountains to make this trip to Hue. So they needed to have at least 10 kg of salt to use during the rainy season.” Each trip took them three nights. They would come back with 10 to 30 kg of salt on their backs.

But the world was changing rapidly around them. By the end of the 1950s, the Communists and the National Liberation Front (NLF) had a blueprint for constructing a supply line through Truong Son mountain range and the Central Highlands. In order to counter this move, the Americans and the Republic of Vietnam (South Vietnam) also began to extend their influence to the mountains. It was in 1957 that the first Americans and ARVN (Army of the Republic of Vietnam) soldiers arrived in A So to begin constructing a military base.<sup>16</sup>

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Now, the ‘ethnic peoples’ (*ngươi dân tộc*<sup>17</sup> as people in A Luoi called themselves) of A Luoi are known as the ‘children of Uncle Ho,’ owing to the contribution they made to the war effort against the Americans. The ‘war of national liberation’ in the 1960s spread even to this remote region, which happened to lie at a strategically critical location right at the bottleneck of what would be known as the Ho Chi Minh trails, stretching from the Communist North down to Mekong Delta.

The war of national liberation brought American presence to the region. And with the Americans came the B-52 bombers and C-123 cargo airplanes the locals remembered as ‘Da-ko-ta.’ The latter dispensed toxic chemicals stored in its fat bottom throughout the valley. The chemicals, which came to be known as ‘Agent Orange’, altered the landscape of the valley irrevocably and continued to secretly—unbeknownst to its inhabitants—poison the land and its people for the decades to come.

When the people of A Luoi returned home from the war, they found their homes completely destroyed. Was it worth the fight? If you were to ask the younger (old) people like

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<sup>16</sup> Many people I spoke to in A Luoi often spoke of ARVN soldiers and Americans interchangeably.

<sup>17</sup> *người dân tộc*

Quynh Dat and Quynh Loc, why they fought the Americans so fiercely, they would tell you that it was to protect their nation. “Your county is invaded by foreigners. Of course, you would fight for its liberation,” they would reason.<sup>18</sup>

There is a forgetting involved in all births of national consciousness, as Benedict Anderson (1983) might say; the minority people of A Luoi fought for the independence of their nation, which was, in a practical sense, not their nation at all before they fought for it. Prior to the wars, they were only nominally Vietnamese, residing inside the border of Vietnam invented by the French, but otherwise existing largely outside the Vietnamese nation-state. But the ten years of war had the effect of concocting that sense of belonging and solidarity, mixing and churning the people of different ethnic groups as in a crucible. Those who joined the NLF (National Liberation Front) army often fought elsewhere, other than in A Luoi. A Luoi, in turn, was fought by the troops from Quang Binh province to the north of the 17th parallel.<sup>19</sup> Promising young men and women were sent to the North, to Hanoi and even to China, to be educated in the ways of modern Vietnam (and, of course, communist ideology). The minority people of A Luoi did indeed fight for the motherland rather than for their own land and their own people. And through this act of patriotism, they won their membership to the Vietnamese nation.

This membership to the nation-state was expected to be associated with certain benefits and responsibilities. All who returned home after the war were given half-a-year’s worth of food and other necessities. Government subsidies in reconstruction were also promised. Some, like the

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<sup>18</sup> For someone like Quynh Tam, who claims to be over one hundred years old (one generation older than Quynh Dat and Quynh Loc, who are in their early 70s), the reason was more pragmatic; the Americans invaded their home and forced hardship on them, so they fought against it.

<sup>19</sup> And it was the Cubans who built road through A Luoi.

people of Dong Son (who now live near the former US A So airbase), left their traditional land, which happened to lie on the Laos side of the border, to become members of the nation for which they fought. Laos, Vietnam, borders, nationality—these entities or ideas, which meant next to nothing before the war, suddenly became the question of survival in the postwar era. With their homeland stripped bare of life through a decade of war, they “wouldn’t have been able to survive without the government support,” as one man from Dong Son said. At the dawn of modernity, citizenship became the only means of sustaining their existence.

Membership in Vietnam brought many changes to the A Luoi valley. Collective farming, which was practiced already in wartime, was expanded and structured under the commune system. Many people were taught the know-how of paddy rice cultivation. “Hill rice was tastier, but more work,” as Quynh Dat said; paddy rice cultivation allowed them to stay near their homes, which also agreed with the government’s sedentarization policy. But it also meant learning new agricultural technology and dependence on products like chemical fertilizers and ploughs.

The new administrative structure and bureaucracy brought many Kinh officials from the lowlands. Kinh farmers also began to migrate to the ‘new economic zones’ set up in A Luoi. The construction of the market, hospitals and schools also brought many Kinh people to the highlands; and now, the population of Kinh people has reached one quarter of the population in A Luoi. The access between different villages within A Luoi valley and to other parts of Vietnam also improved with the building of roads and communication infrastructures. In schools built in each commune, Vietnamese language was taught, and the students with good grades now pursue their studies in cities like Hue, Danang and Hanoi. Through these processes, the ethnic minorities of A Luoi were rapidly integrated into the Vietnamese nation-state. Except for a few who reflected on the past with

nostalgic attachment, most people seemed to actively welcome these changes.

Since the year 2000, government projects to aid people living in ‘backward areas’ in the highlands—such as Project 135—were initiated. These projects of the Central Government provided assistance in improving the quality of education, healthcare and economic opportunities in places like A Luoi. They upgraded infrastructure like roads, electricity and communications. Through these programs, people’s livelihoods improved markedly. The government Agent Orange compensation, which began in 2001, also needs to be considered in this context.

Today, one thing visitors to A Luoi would notice when they enter the houses of the minority peoples of the region is the row of certificates of wartime contribution that lined their walls. In recent years, one of the tasks with which the officials at each commune busied themselves was to make sure that the locals did not lose their certificates. These papers entitled them to pensions from the government, which was becoming more structured and reliable with the improving economy of the nation. In A Luoi, a fair number of older people are now receiving pensions related to their wartime services. For those people who were officers, the amount of pension can be as high as that of public servants in local government. Between pensions and government projects aimed specifically at raising their standard of living, the ethnic minorities of A Luoi have benefited significantly from the government in the last ten years or so.

In comparison, many of the Kinh people in A Luoi were civilians during the war. Some were even sent there with little choice of refusal, for their wartime record of complicity with the Saigon regime. These people could benefit from neither the projects directed to ethnic minorities, nor the benefits associated with wartime service. Thus it was not without reason that people like



Quang's mother occasionally grumbled under her breath, "all government aid goes to ethnic people anyway." That Quang did not receive the Agent Orange compensation, and that his parents had never filed a complaint with the government about it, was nothing surprising seen in this light. In many ways, they were the 'un-entitled' people with no means of claiming their rights. They were fundamentally different from the 'entitled' Children of Uncle Ho, like the ethnic minorities in A Luoi, or the elites of the revolution from the North.

This privileged situation of ethnic minorities (at least on policy), however, did not necessarily mean that they thought of themselves as having the rights to demand certain treatment. "If there is one thing that differed culturally between Kinh people and the minority people nowadays, it is the venue of complaint," said Ho Thi Sang, the Vice Chair of the district's People's Committee. "The ethnic people don't know where to go when there is a problem." There have been attempts to raise ethnic people's 'consciousness', she said, to teach them about their rights and entitlement, and the means of accessing help. But this work has only begun. As one ethnic minority person told me, at this moment, ethnic people would take whatever that is given to them, but they would not demand anything in relation to the state; they would wait until the problems resolved themselves when they arose.

In this context, of all families I associated with during my fieldwork, Thanh's family was an exceptional case. They actually demanded the Agent Orange benefit from the government for their daughter, Nhue, and actually obtained it, in spite of the fact that, strictly speaking, she did not fit the criteria for the Agent Orange benefit laid out by the decree.

### ***Pilgrimage to Peace Village***

The spring of 2009 was the first season Thanh did not plant his rice. Until recently

Thanh's family owned a large tract of land, mostly planted with trees, but also rice paddies. But that spring, he did not plough his field. This was because their land was a part of an area about to be inundated for one of the many hydroelectric dams currently under construction in the valley.

The construction of hydroelectric dams was one of the changes brought to A Luoi by the modernization that started around the year 2000. For the entire duration of my fieldwork in A Luoi, I fearfully witnessed many dump trucks carrying dirt and gravels on the Ho Chi Minh road, going to-and-fro and raising clouds of dust behind them. Good thing they had the assurance of Hatfield Consultants that the dioxin level in most regions of A Luoi valley was already down to a negligible amount. After years of preparation, in the summer of 2009, the flooding had begun.

"We opposed. And we refused to accept their offer of payment, but they've cut the water, so we can't grow rice anymore," said Thanh's wife, Phuong. "Grandpa had 5,000 square meters of land. They were giving him 200 million (12,500 USD) dong for it. What is that? This house cost 100 million. They were going to give us 2 million for the land we had. What can we buy with that?"

They tried to persuade the other residents to oppose, if not the dam itself, at least this savage extortion of their land for such a small amount of money. Both Thanh and Phuong were originally from the north. Phuong had come to A Luoi from Ha Nam province (near Hanoi) in 1998 to marry Thanh, who was originally from the same village, but had been living in A Luoi since 1982. In recent years, there was a similar case of corporate buy-up of land to build a highway near Hanoi.<sup>20</sup> The local residents there were protesting it. But, here in A Luoi, Thanh and Phuong could do little to rile up the other residents to oppose the buy-ups by the company.

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<sup>20</sup> Labbé D. (forthcoming). "Urban destructions and land disputes in periurban Hanoi during the late-socialist period." Pacific Affairs.

“People up here are so poor, and not educated”, said Phuong vexed. “They don’t think about opposing anything. So for them, any money was good enough.”<sup>21</sup> The district government pressured us, the provincial government pressured us. The local People’s committee here heard us, but couldn’t do anything to stop the companies. Nobody said anything. No reporter has come here either. Maybe they weren’t allowed to say about it. But it’s actually not the government. It’s the greedy company. They get money allocated by the government to buy our land, and for them the profit is higher if they paid us less.”

Now that they had no land to grow rice, her husband, Thanh bought a license to use the lake between his house and the former site of Ta Bat airbase for fish farming. Lately, Thanh was spending many nights at a shack out by the lake to guard his fish from thieves. Once the fish are big enough, Phuong will begin to take them to the market at the district centre to sell them, while Thanh takes care of his daughter, Nhue. For the time being, Phuong was selling everyday necessities like soap and cooking oil at a small stall in front of their house while she looked after Nhue.

Nhue was also one of the children Phai introduced to me as an Agent Orange victim. When Nhue was born in 2001, it was not even seven months into pregnancy. Her cranium was still soft and she was extremely small, Phuong remembered. But they did not notice anything wrong with her until six or seven months after birth. Nhue suckled and cried like any other babies. Nobody thought twice about the rigidity of movement in her limbs, until Phuong’s mother came to visit from Ha Nam and saw that something was wrong.

The grandmother suggested taking Nhue to Children’s General Hospital in Hanoi. It was

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<sup>21</sup> It is also possible that ethnic minorities in A Luoi were not used to putting monetary value to land. Considering how they led semi-nomadic life before the war, it is also possible that they had less attachment to land than Kinh people.

known to be the best in the country. When Phuong took her there, the doctor who saw Nhue at the hospital first told her that Nhue was only ill, that she can be cured. “So he did some exercises. But it was only for 15 minutes. Expensive. There were over two thousand disabled kids at that hospital,” she said. Eventually doctors told her that Nhue cannot become normal. She had some sort of brain damage, and it was too late to recover from it. The doctors prescribed medicine. “Lots of medicine. She took a lot of medicine”, Phuong said holding back her tears.

Phuong and Thanh had just started their life together in A Luoi. But the money they had as a wedding gift soon ran out. All the hard-earned money went toward Nhue’s medical bills. Their parents also supported them, but in the end it came to nothing but a small mental comfort—that they were doing everything they can to help Nhue. They saw no improvement in her condition. In 2007, Nhue began to refuse taking the medication. “Between the ages of ten months old and six years old, we spent about 30 million dong (\$2000) for Nhue’s medicines,” she said with Nhue in her lap. “That hospital in Hanoi, that place was barbaric!”

If they had gone to the General Hospital in Hue or Peace Village, a German funded centre that provided rehabilitation for children with disability, it would have been a lot cheaper. But they insisted on going to the hospital in Hanoi, because it was supposed to be the best. “Even if it is more expensive, for a child, you’d want to spend that money. And my relatives back home said the hospital in Hue won’t do. General Hospital in Hanoi is the best in the country.”

When she first came to A Luoi in 1998, Phuong had not heard about dioxins. “I heard later that this area is contaminated with dioxin. And this area, Hong Thuong is especially contaminated,” she recalled. A few years later, a team of foreign scientists came, collecting samples of swine, chickens, ducks and fish. It was some time after that that people heard they are

not to eat things like fish innards and duck livers, because of something called ‘dio-xin.’ But it was not until she took Nhue to Peace Village in Hue that she came to think that Nhue’s disability was caused by Agent Orange.

Peace Village in Hue was a place of pilgrimage for the parents of Agent Orange victims, in the sense I discussed earlier. Parents of children with physical disabilities took their children there and learnt how to help their kids exercise their muscles. They shared their time with other parents with children like theirs, and saw that they were not the only one in such a situation. Quang went there. Nhue went there. Many other children I met in Aluoi also went there. In the earlier days, some of the parents heard the word “*chat doc*” (Agent Orange) for the first time there. Now, it was a tacit understanding whenever they saw anyone with birth defects. Whatever they heard from other parents or from the staff at Peace Village about their children, it was a rumour without certitude, but the idea was cast in their mind. Phuong cried when she first heard that Nhue was an Agent Orange victim. “Agent Orange meant that she cannot be cured”, she knew; it meant that there was no longer a hope that Nhue would ever become normal.

Yet, when they returned home to A Luoi, Phuong found that the People’s Committee did not recognize Nhue as an Agent Orange victim. “They say that she is not an Agent Orange victim, just disabled,” Phuong told me in 2008. “Thanh said to Dien, the man who takes care of Agent Orange pension, if you say that this one is not Agent Orange, then talk to grandma. She died in April. She had so many different illnesses. The doctor at the General Hospital in Hue said that she had seven illnesses. The worst was the kidney infection. She took out two kidneys. Spent a lot of money for the operation, lived for two more years, and then went straight to the other world. She was ill for eleven years and died.”

This paternal grandmother was receiving the Agent Orange pension, because she was in the army as Youth Volunteer during the war. Perhaps this was the ‘tie’ that eventually got Nhue her Agent Orange benefit. The year later in 2009, Nhue was receiving the Agent Orange benefit of 318,000 dong per month. Lobbying with the local People’s committee must have born its fruit.

Thanh’s family was unusual in this respect. A few years back, Thanh collected 300 signatures from the people around their commune about the situation they were having with Agent Orange and sent it to the VTV television station in Hue City. They protested against the land buy-up by the hydro company. And they lobbied with the local government for the recognition of Nhue’s Agent Orange status. I met no others like them in A Luoi valley.

### ***Embracing Biological Uncertainty***

In the aftermath of toxic disasters, recognition of the status of victims in the form of access to compensation from the state or corporations offers one of the few sources of legitimation of victims’ suffering. Adriana Petryna’s (2002) ethnography on post-Chernobyl Ukraine offers one of the most stunning accounts of the entanglement of administrative rendering of suffering and the transformation of victims’ subjectivity who take their biological existence as a resource for claiming their citizenship rights.

In *Life Exposed*, Petryna (2002) describes how the victims of radiation poisoning in Chernobyl negotiated their identity and a special claim to citizenship rights such as welfare payment and the access to medical care through their injuries. In the post-Soviet Ukraine, the compensation for the 3.5 million victims of Chernobyl was taken up as an integral part of *nation building* and democratization in the process of gaining independence from Russia. In this context,

compensation scheme based on the ‘objective’ scientific evidence was seen as a *democratic right* of the citizens. The ‘victims’ of radioactive poisoning, therefore, made themselves *knowledgeable* about their biological condition and negotiated their Chernobyl “tie” (or a legal document confirming the link between their disability and radiation exposure) in relation to the medical, scientific and legal authorities. These institutions functioned as gate-keepers of their victim identity, selectively legitimizing their injury and compensating for it.<sup>22</sup> Petryna called this kind of differential claim to citizens’ rights, ‘biological citizenship.’

The case of Agent Orange victims in Vietnam presents a very different story. The examination of the case of Agent Orange victims through the three main themes in Petryna’s framework of biological citizenship—the relationship of the victims’ identity with 1) nation building, 2) democratic rights, and 3) the accumulation of scientific knowledge—all return unsatisfying results. As discussed in the last chapter, the government of Vietnam has long shown ambivalence toward the issue of Agent Orange. It has forfeited its right to pursue compensation from the United States government in the course of the normalization of their relationship in the mid-1990s.<sup>23</sup> It has never taken a leading role in defining or administering the welfare of the victims as a part of their nation building project. Because most people think that if justice be done,

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<sup>22</sup> Petryna’s (2002) notion of biological citizenship describes the close connection between the idea of the entitlement to state resources and the subjectivity of the victims of toxic disasters. It is not that victims exist first and somehow this victimhood entitles them to compensation; rather, the victims are constituted in the course of claiming their entitlement. This concept has seen wide applicability in the scholarship on patient activism particularly in industrialised liberal democratic countries, but also in places like Southern Africa (Nova and Rose 2005). It was a concept very much like Paul Rabinow’s ‘biosociality’. But with an additional dimension of ‘citizenship project’, “the ways that authorities thought about (some) individuals as potential citizens, and the ways they tried to act upon them.” (Nova and Rose 2005: 439). See also Wehling (2010) on citizenship project vs negotiation of social identities.

<sup>23</sup> I do not mean to say that they have done nothing for the victims. But the situation was different, for example, from Veena Das’s (1996) account of the accident at Bhopal, India or the atomic bomb survivors in Japan. In both cases the victims negotiated with their own government, which became the surrogate for the ‘real perpetrators’, i.e. the Union Carbide and the US military, in the process of distributing compensation.

the United States government should bear the responsibility to compensate the victims, the movement to recognize the victims of Agent Orange has never turned into a demand for democratic rights vis-à-vis the state of Vietnam (except in cases like Nhue, which was solved on individual basis rather than demanding structural change).<sup>24</sup> In this context, at least in my field site in A Luoi valley, scientific knowledge was considered to be largely superfluous. Scientific uncertainty was thought to be a given, especially in a nation still under development, and it had little practical usage in the absence of a comprehensive compensation scheme.

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In February 2009, I was at the People's Committee of Huong Lam commune for the monthly renewal of my research permit. Huu, who usually processed my paperwork was still not back from lunch, so I decided to have a coffee at a small café by the People's Committee. As I was staring absentmindedly at the drips of coffee from the stainless steel filter, one of the police officers of the commune came and sat in front of me.

On the low plastic table between us, there was a list of people in Huong Lam who were receiving the Agent Orange benefit, which I was just given few days ago at the People's Committee. I took the list in my hand and handed it to him, saying "they gave me this at the commune."

The officer looked at it for some time, and then casually threw it on the table, and said, "Who knows? Maybe it's like this." He drew three rows in the air with his hand. "When 10/80 committee came to see the people to determine if they were affected by Agent Orange, they first saw the people from Kanon village. By the time they got to see the people from Lien Hiep village,

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<sup>24</sup> As it did in the case of the victims of atomic bombs in Japan. Although this is also a very different case.



they were too tired, or they ran out of quota.” He was clearly upset. “There are Agent Orange victims in our village too, but nobody receives Agent Orange compensation.”

Agent Orange compensation was quite generous in comparison to the standard of living in A Luoi. Clients now each received something between 300,000 to 680,000 dong (\$20-40 USD) each month. But as we went through the list of people receiving the compensation, we realised that the distribution of the compensation was indeed uneven, with Ka Non village receiving the majority of it.

Dr. Sinh, who participated in testing people for Agent Orange compensation in A Luoi, was quite frank about the inexactness of the diagnoses. “It wasn’t exactly to test if they are Agent Orange victims,” he said. “For that we didn’t have the equipment. We didn’t have enough training or instruction from the Ministry of Health. We tried to be impartial. But we couldn’t spend a lot of time on each patient either. Each doctor had to see almost 100 patients a day. So Agent Orange benefit is not very accurate, medically speaking. It was a way to give out aid. We all wanted to see many people getting the support, because they are all poor.”

One thing to note is that it was not until 2008 that the diseases covered in this disability payment were specified in legislation.<sup>25</sup> This laxness regarding the medical identification of the victims is a consistent attitude of those who gave out aid for Agent Orange victims. Once the Agent Orange movement gained recognition in the national arena, the government responded to the issue of Agent Orange in good faith, launching a compensation scheme for its veterans and other programs such as a campaign for “Poor Disabled People, Including Those Thought to Be Affected By Agent Orange” (Fox 2006: 10). But this naming was also indicative of how the issue

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<sup>25</sup> Decision: 09/2008/QĐ-BYT. I cannot see it citing a former decision specifying the diseases covered in this legislation, so it is likely that this was the first one. But it is still possible that former state existed. [see Appendix 1 for the comparison of the diseases covered by Agent Orange compensation in the United States and Vietnam]

of Agent Orange is conceived in Vietnam.

For instance, VAVA in Danang has two centres named ‘Centre for Agent Orange victims and *unfortunate children*’. This naming has led some of the foreign visitors to wonder about what ‘unfortunate children’ is all about. When I asked Ms. Diu, the president of the association, she explained:

Our first priority is toward the victims of Agent Orange, to be sure. But when you are building something like this centre in a community, you have to realize that in a long run there will be children who are not Agent Orange victims necessarily but are still in comparable circumstances—children who have no parents, children who are disabled and so on. So we decided to add this term ‘*trẻ em bất hạnh*’ (children, unfortunate).<sup>26</sup> This would include the children suspected to be the victims of Agent Orange, and those who are in such a hardship even though they may not be the victims of Agent Orange.

There was also a practical problem of identifying the victims. The staff members of VAVA often assumed that in order to identify the victims scientifically, they needed to take the measurement of dioxins in the blood sample. Currently, the standard measure of dioxin congeners (types) is conducted by the use of high resolution gas chromatography and high resolution mass spectrometry (HRGC/HRMS). This technology allows the measurement of dioxins in wet sample to the order of 1 part per trillion, but the downside of this technology is that it is expensive. There are currently only a handful of dioxin laboratories certified by the WHO around the world, and each measurement cost anywhere between \$1000 dollars and \$1500 dollars. A cheaper technology called CALUX (Chemically Activated Luciferase Expression), which utilises bioassay, is also available, but its drawback is that it cannot distinguish different congeners of dioxins, and the accuracy of the measurement at low dosage is still questionable. Whether GC/MS should be considered a gold standard for dioxin related research is still under debate. So far, the Institute of

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<sup>26</sup> trẻ em bất hạnh

Medicine's *Veterans and Agent Orange* committee does not consider tissue sample measurement of dioxin as the gold standard for epidemiological studies, because the mechanism through which dioxin is metabolized is still not well understood.<sup>27</sup> But at places like VAVA, dioxin measurement was often cited as the only means of ascertaining the status of Agent Orange victims. And this assumption led staff members to remark: "In Vietnam, if you have \$1000 it is better to use that money to provide support for the families."

Science was certainly important. But in a country as impoverished as Vietnam (as many Vietnamese said), it made little sense to spend so much money on medical tests when that money can be used to help the poor.<sup>28</sup> When economic conditions dominate, scientific truth about the self may not rank high on the priority list. In this context, the 'cost of dioxin measurement' can be seen as a convenient decoy for other reasons why Agent Orange victims cannot be identified.

In Petryna's (2002) ethnography on the Ukraine, her conceptual threads of nationalism, democratic rights and the accumulation of biological knowledge coalesced, rendering the concept of 'biological citizenship' compelling. In Vietnam, however, 'biological citizenship' seems to dissipate in the face of the provisional character of the current response to the problem of Agent Orange. Since it is unlikely that the United States would compensate for the victims in Vietnam, *in*

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<sup>27</sup> The half-life dioxin in human body is said to be anywhere from 5 to 10 years, but higher dosage, this half could be a lot shorter. In 2004, the incumbent president of Ukraine, Victor Yushchenko was poisoned with TCDD dioxin. In the measurement three months later, his blood serum contained dioxin level of 108000 pg/g lipid weight. Considering how the highest dioxin level in Vietnamese Hatfield consultant has measured is just over 1000 pg/g from a man in Danang, this was an extremely high level. When Swiss scientists, Sorg et al (2009) monitored the dioxin level of Yushchenko, they found the half life of about 18 months. It appeared that beside the initial dosage, the combination of chemicals the patients were exposed also affected the biodegradation of TCDD dioxins. (which means that the present dosage is not necessarily an accurate indication of the dioxin level in the past) (O Sorg, M Zennegg, P Schmid, R Fedosyuk, R Valikhnovskiy, O Gaide, V Kniazevych, J-H Saurat. 2009. 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) poisoning in Victor Yushchenko: identification and measurement of TCDD Metabolites. *Lancet* 2009; 374: 1179–85)

<sup>28</sup> Instead, in determining the most likely cases of Agent Orange poisoning, Minh and other volunteers in the local branches would combine the medical condition of the individuals with their history of exposures, such as where they lived and whether they participated in military actions during the war in the regions sprayed by Agent Orange.

*the meantime*, the Vietnamese government and humanitarian organizations have offered their hands in aiding some of the victims in dire need of material and psychological support. *Given current* scientific uncertainty, who should be compensated as Agent Orange victims is put on hold.<sup>29</sup>

“Like other dimensions of citizenship” Carlos Nova and Nicolas Rose (2005:440) wrote, “biological citizenship is undergoing transformation and re-territorializing itself along national, local and transnational dimensions.” Various forms of borders re-assert themselves, and sever the homogeneity of the biological reality of Agent Orange victims. In contemporary Vietnam, the ‘biological’ status of the victims guaranteed no entitlement to special citizenship rights in Vietnam; rather, differential citizenship rights—based on other factors like ethnicity and family history of participation in war—seemed to entitle them to differential biological identities, like being a victim of Agent Orange.

### ***Conclusion: Humanitarian Citizenship?***

At the edge of the front porch, there is a wheelchair covered in dust. “A foreign organization brought it for Quang, but he can’t use it because he can’t sit straight,” said Quang’s father, Thun. Quang was able to stand on his feet, if he held on to something. He could crouch like a frog on his knees, but bent forward. Sitting on the seat of a wheelchair, however, was too painful for his stiffened back. In A Luoi, I saw many wheelchairs like this one, abandoned at the back of the house, all rusty and dusty. The locals said that it was because they cannot use it on the gravel.

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<sup>29</sup> Neither the government nor humanitarian organizations provides a comprehensive assistance for Agent Orange victims as such. And as many activists had commented, humanitarian aid does not require the insistence on the demarcation of suffers into victims and non-victims. (In fact the spirit of humanitarian aid, some have argued, goes against it.)

“In cities, it might be useful, but here, there are so few paved roads.” They took what they were given, but the gifts were not always the things that they most needed.

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Many people came to visit that morning. There were two Paco men who worked with Thun, drinking tea at the table inside. There were a couple of girls who came in to buy rice wine Linh brewed, presumably for their fathers. Then a pair of boys came in with scrap metal and plastics to sell. Linh was very industrious. She kept herself busy to keep her family fed, raising pigs, ducks, and chickens for sale, and often taking wage labour in the bush, which took her away from home for several days. All of this work, she said, was necessary because they did not have the land to cultivate rice. As she once exclaimed, “How could Kinh people like us have a rice field? They all belong to the ethnic people!”

I knew that it was not altogether true. There were plenty of Kinh people who had land in A Luoi, like the family of Thanh, for example, who came from Ha Nam province near Hanoi and now lived just few blocks up the road from Linh’s.

Thanh came in that day with Tuan to talk about a loan for raising cows. It was the project Alain from the French-Vietnamese Friendship Association came to discuss back in February. As the newly appointed local rep of Red Cross in the Hong Thuong commune, Thanh was entrusted with the responsibility to bring the offer of this loan to the families of Agent Orange victims and explain to them what it entailed. Part of the loan will be given for free; that is, out of six million dong used to buy a cow, they only need to pay back three or four million dong. “If you are interested, the loan is yours. If not, the loan goes to someone else,” Thanh told them.

After hearing Thanh’s explanation, Linh agreed to take the loan. But after Thanh and

Tuan left, she displayed her unease. Raising pigs, ducks and chickens, she knew how; but she had never raised a cow before. They were going to give her a short training on things like what to do if the cow became sick. But there were many other issues. She knew, for instance, that it will be very difficult to find enough grass to feed it in the rainy season. “It will be a lot of work,” she muttered. Caring for cow meant taking it out to graze. In the rain season they would have to take it to the hills to graze, because there was nowhere to graze around her house.

She turned to her thirteen year old daughter, Ly, and said: “She would be the one who would take care of the cow,” and Ly returned a smile. “This one here is a big help for me,” Linh said. “She even came to the bush last time. She likes working. Hey?” she smiled at Ly.

Both Linh and Thun were often out for hire, and Ly did a lot of chores around home, dishing, cooking, cleaning, and taking care of her brother Quang. Ly was Quang’s younger sister by two years, but because Quang could not go to school, Ly often taught him what she learnt at school, or otherwise Quang studied by reading Ly’s textbooks on his own. With all that, she still did well at school. She was the smart one of the family.

One day, toward the end of the school year, Quang told me proudly, “Bé Ly got an award at school!”

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“The government takes care of the veterans; the rest will be cared for by VAVA and other humanitarian organizations,” said Dr. Tran Duc Minh, vice president of VAVA Hanoi. VAVA has lobbied with the government for a more comprehensive compensation program. “But not demand,” he said, “because we work together with the government on amicable terms.”

The Agent Orange movement had a strong transnational element because a large portion

of the responsibility to care for the victims is taken up by humanitarian organizations. As the story of Quang with which I began this chapter suggests, humanitarian aid also provides a kind of anchor for the identity of Agent Orange victims. The question was what kind of subjectivity such humanitarian definition of victimhood gives rise to. The financial resources one could expect through donations were limited. It also fluctuated at the whim of the donors and the shrewdness of the activists in fundraising.

But people who received humanitarian aid once may now feel entitled to further gifts of aid, because they have become *someone to be helped*, by that act of giving. Then, would it be useful to speak about ‘humanitarian citizenship’, where citizenship rights like access to healthcare and entitlement to aid for people with disabilities were conceived and provided by non-governmental organizations? In contemporary Vietnam, however, the extent of such citizenship (if one could claim it existed) seems to be limited, as the number of people to be aided far surpasses the available resources, and the temporary nature of these gifts is conspicuous.<sup>30</sup>

In 2009, the day Linh used the word ‘chat doc’ to describe Quang, this identification as Agent Orange victim had little to do with a sudden eruption of eureka! moment, when Quang’s disability and present suffering was linked to the toxic exposure through reflection on past experiences. Neither did it involve a ‘social’ experience like the opinion of a medical professional or exposure to stories of other people in a similar situation. What triggered this momentary identification was that the family was receiving a loan to buy a cow *because Quang was an Agent Orange victim*. Why else would he be receiving this loan?

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<sup>30</sup> Furthermore, for the foreign charity organization, because the success of their activity in Vietnam hinges on the good faith of the local authority, it is still difficult to support the former Saigon soldiers, who are still being discriminated against (see Chapter 10).

It was quite possible that they were chosen to receive the gift largely by chance. The French humanitarian organization had a mission to support Agent Orange victims; but they probably had no interest, nor means to actually test whether Quang's disability was caused by Agent Orange. But such an issue was incidental. The gift of a cattle itself was the best confirmation of the fact that Quang was an Agent Orange victim. 'He is given the gift because he is an Agent Orange victim; then he must be an Agent Orange victim': the logic went thus.

I do not intend to say that people did not think Quang was an Agent Orange victim before then. In fact, had I insisted on yes-or-no answer about whether he was an Agent Orange victim, his parents and neighbours (possibly himself too) would probably have said yes. But what kind of reality does such an identity have? Susan Whyte (2009: 13) wrote (following Michael Jackson) that "it is, after all, a life and not an identity that people are usually seeking." It was one thing to claim identity as an Agent Orange victim in a certain context when benefits and entitlement was *bestowed* upon them; but it was quite another issue to have awareness or conviction of it in everyday life. How did people think about the effects of Agent Orange before it became politicised, before any forms of compensation or aid were available? What were their experiential bases for their grievance?



## AFTERTHOUGHT

Maybe you don't know much about the war?

The woman sat across from me with her legs crossed. The boy from the bike shop ran across the street occasionally and sat beside her and listened to her story for a while, then crossed the street again to meet the customers who'd come to him with flat tires or worn-out brake pads.

He has no parents, so he's been making his living like that, the woman said.

After a full day of interviews in the stuffy room under the tin roofs, the breeze felt nice in the late afternoon sun.

There were several pockets of settlement by Kinh people in A Luoi valley in isolated enclaves like bacterial cultures in a Petri-dish. Most were spread in the plain near the district centre in communes like Son Thuy and A Ngo. In places like Huong Thuong, they were more mixed together, and thus they had more to say about each other. Like, how the village People's Committee were overrun by the uneducated ethnic people. How ethnic people took all the good lands, and all the government benefits, and so on.

There was a lone carpenter in Dong Son who was quite happy living with the ethnic minorities there, even though it seemed he was left out of loop when all the other villagers were relocated away from the dioxin hotspot in the fenced off section of the former airbase, right across from his house. He remembered Canadian scientists taking soil samples from the bottom of his well and the little pond behind his house which he used for fish farming. He did not know what came out of that test. Somehow, the road, which lied between his house and the airfields, protected his family from dioxins so he and his family did not have to move when everybody else around

them did.

Then, there was a settlement of Kinh people on a narrow strip of land between route 16 and A Sap River. Many of the families, like that of this middle aged woman who sat in front of me, were people with tainted family background.

It was the time immediately after the war. Rumours began to circulate among the fugitives from Hue City about disappearances. People spoke—in a hushed voice, just like the woman in front of me did now—of the families which disappeared altogether overnight, that Viet Congs were taking the urbanites, who collaborated with the Americans and the Puppet government to be executed. Those who were left behind by such disappearances searched for any signs of their predicament, and that they came upon caves, where they found remains of their loved ones who were identified by their familiar possessions like the bracelets they wore.

It was an uncertain time for families like hers, whose father was a government official of the Republic of Vietnam in Hue City during the war. One day, her father, who had been taken away by the Communists, returned home with a choice to resettle in a ‘new economic zone’ in the mountains.

It was, in fact, not a choice at all, she remembers, since the choice was between voluntary exile and forced exile to re-education camp. Either choice would have taken them to A Luoi valley.

Were you afraid when you first came here? I asked.

Of course, she replied.

The valley surrounding the A Sap River looked quite fertile, with trees growing dense and tall. Zooming past it on rented moped each day on the way to Dong Son, I mistakenly thought that

it was like an oasis in a land devastated by the chemicals.

But the soil around the river is so full of rocks, she said. It was not suitable for cultivation. That's why we are growing trees now. All other places are less forested because they are tilled. Because they are good enough for paddy fields. When we first arrived, we tried to till the land and grow rice. But the productivity was so low; one *sau* of paddy field would yield only about two basket-full of rice.

After a while, people abandoned it and moved to the land closer to Ho Chi Minh road and started small commercial activities. Otherwise they engaged in forestry or slash-and-burn agriculture, which made the local minority people chuckle, saying "the Kinh people here have gone native!"

*It was the first time I lived in the mountains*, she said. There was no electricity here back then. We were living in the forest, too. We'd even have wild boars entering our house. It was built so poorly, wild animals came in and out freely as if it were their own. There were also diseases.

Malaria?

Yes. Lots. One time everybody got it. A lot of people had stomach problems, and got ill from drinking the water in the streams here. And, you know, with the chemicals.

People often mentioned chemicals like this—like an afterthought—unless they were prompted.

Are there lots of people who got sick because of the chemicals?

Yes. Many. Problems with birth-defects too.

Do you know anyone with children with birth defects? Anyone whose family came to A Luoi after the war?

There was a moment of hesitation.

No, the woman said and looked down.

The setting sun stained the cement walls of the café as I took my leave. It was often like this. In earlier interviews that month, when I was attempting to draw a cognitive map of illnesses in the village, I realised how people often refused to give me specific information about other people's illnesses. It was none of their business to speak about it, one of them told me. As if it were a taboo to give that information out to a stranger; as if it were a secret held in confidence.

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“In wartime we were enemies. But in peace, we are neighbours. It is the same when American visitors come here. We make friends with them. The first years the Americans began to come up here to look for the remains of their fallen soldiers, there were animosities. Some locals would even throw stones at the Americans. But that was because they were not educated well. They don't do that anymore,” said Quynh Thi.

How many times you have heard such an explanation! For scientists, consensus may indicate truth; but for anthropologists, too much consensus raises a red flag. “Leave the past behind and look to the future.” How ever noble such a goal may sound, feelings and resentments are not that simple. The past did not simply wash away. It stayed just beneath the surface and remained there (just like the toxic chemicals did), and churned at their subconscious until it weathered with time.

Contemporary Vietnam was founded upon that past. The Pacos and Katus hopped over the border to be one with the Revolution – and to receive the support of the government they were

promised. They grew paddy rice with hands unused to ploughs and sickles. They worked side by side with the Southerners from the plains, who had skills and knowledge fit for life in modern Vietnam, but had less support of the government because of their questionable wartime record.

In contemporary Vietnam, the past not only resided in private affect, but also in institutional structures. Those on the winner side did not notice it much, but those on the loser side did. The glass ceiling set up at government office, outright discriminations in the form of social welfare; history one could mention, only in whispers. The Party of the Revolution repeats thus, “leave behind the past, and look to the future,” like an incantation to exorcise a ghost.

There were plenty of ghosts in Vietnam to be reckoned with.

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Now, let us take leave of Vietnam for a moment to discuss the development of moral and scientific ideas that led to the politicization of Agent Orange and its health effects.

— PART II —  
THRESHOLD OF POISON

*VAVA v Dow et al* (2004) attracted much attention of people such as peace activists, Vietnam veterans, scientists and international legal scholars around the world. While different people were interested in different aspects of this case, legal scholars were particularly interested in the use of Alien Tort Claim Act (ATCA), which was one of the key legal instruments under which this lawsuit was filed (Seebok 2005). Alien Tort Statute (ATS) provided that U.S. Court would have “jurisdiction of any civil action by an alien for a tort only, committed in violation of the law of nations or a treaty of the United States” (cited in Bederman 2001:107). It was a law written in 1789; but it lied largely dormant until the landmark case of *Filártiga v. Peña-Irala* in 1980, a civil suit brought to US Court, in which the defendant—a former Paraguayan police residing in the United State at the time—was accused of kidnapping, torturing and murdering the plaintiff’s brother while he was the Inspector General of Police in Asunción in Paraguay.

Since then, ATS has been invoked in a number of human rights cases (including *Sosa v. Alvarez* and *Doe v. UNOCAL*) in which grievances were filed in US Court by foreigners for violation of international human rights law. It is still unclear as to under what international laws Alien Tort Statute authorises action. But in the previous cases, norms recognized as *jus cogens* laws<sup>1</sup> such as those against genocide, torture, and crimes against humanity were thought to meet

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<sup>1</sup> Norms of international law recognized by all nations, from which no nations can exempt itself through treaties or conventions.

the standard (Robertson 2006:188). In recent years, Corporate America, whose business practices in developing countries sometimes bordered human rights violation, has paid an inordinate amount of attention to the cases involving ATS (Sebok 2005:2).<sup>2</sup> The outcome of *VAVA v Dow et al* was closely followed as it was thought to have bearing on other future cases involving Alien Tort Statute.

The other aspect of *VAVA v. Dow et al* was a product liability litigation based on domestic tort law. The Vietnamese litigation was beset with many difficulties from the beginning. Shortly after they filed their lawsuit, American veteran's opt-out case (*Isaacson and Stephenson v. Dow et al*) which began at the end of the 1990s was dismissed under what was called the 'government contractor defence,' an argument which essentially said: 'since government made them do it, it is not their fault.' It was inevitable that this decision was also going to affect the Vietnamese case. The US Ministry of Justice also expressed an opinion stating a view that this litigation potentially infringed upon the President's office's right to conduct war unhindered by the judiciary.<sup>3</sup> It was also noted that the question of compensation for Vietnamese Agent Orange victims was a matter of diplomatic and political issue to be resolved between the two governments of Vietnam and the United States.

*VAVA v Dow et al* was dismissed in March 2005. In the statement of dismissal, Judge

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<sup>2</sup> The ATS does not give courts a "mandate to seek out and define new and debatable violations of the law of nations." *VAVA v. Dow et al* (2006): *Brief for Defendants Appellees*: 29 (05-1593-cv)

The defendant lawyers claim that international law plaintiff lawyers invoke (i.e. Hague prohibition against the use of poison weapon) is too imprecise to be actionable under ATS ("defined with a specificity comparable to the features of the 18th-century" (Sosa)) p28. Proscription of causing 'unnecessary or unjustified suffering' is also too subjective to be invoked under ATS. Through this highly esoteric legal argument, defendants somehow ring in the issue. That the suffering caused by dioxin was unnecessary is not debatable even for the defendants.

<sup>3</sup> *VAVA v. Dow Brief of the United States as Amicus Curiae in Support of Defendants-Appellees*. 05-1953-cv

Weinstein made a general remark about the insufficiency of scientific evidence of causation linking the plaintiffs' illnesses to the chemicals in question; but he also stated that further discovery on scientific evidence was not necessary at the moment, since no motion was filed by the defendants regarding it. As expected, the principal argument in favour of the defendants was the government contractor defence. This argument gave the manufacturers of the chemicals virtual immunity by exempting them from legal liability for any consequences of Agent Orange, *except*—and the statement came with a clause, reiterated by the Judge—in cases where violations of international laws are recognized.

Having dismissed the plaintiffs' domestic tort claims, Weinstein moved on to examine their international law claims. The list of international laws that the plaintiffs accused the defendants of violating includes: torture, war crime, crimes against humanity, environmental law, and even genocide. Judge Weinstein dismissed all these claims based on an argument that Agent Orange is a herbicide, and not a poison. He wrote:

A 'herbicide' is an agent used to destroy or inhibit plant growth, while a 'poison' is a substance that through its chemical action kills, injures or impairs an animal organism. A highly toxic herbicide may be poisonous and poisons may harm plants. Characterization as both, or as one or the other, depends upon *design and degree*.<sup>4</sup>

Thus, while dioxin, which is a contaminant of Agent Orange, is a poison, Agent Orange is not a poison. And insofar as Agent Orange was not a poison, its use in Vietnam did not violate the customary international law prohibiting the use of poison in war. At least in part, therefore, this

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<sup>4</sup> *Vietnamese Assoc. for Victims of Agent Orange/Dioxin v. Dow Chem. Co., MDL No. 381, 04-CV-400 (E.D.N.Y. Mar. 10, 2005) (Amended memorandum, Order and Judgement).p. 50 (my italic)*



litigation was a contestation over the binary categorical identity of the *chemical substance* as poison or not and the subjective intention that defined it, rather than about the etiology of conditions and diseases suffered by the plaintiffs. The question was: whose intention and whose design determines the nature of a substance?

Agent Orange was not *meant* ('*designed*' in Judge Weinstein's language) for all the evils it was later accused of committing. In this sense, it was unlike any other weapons of mass destruction. From its birth, atomic bomb, for example, was a lethal weapon, designed with an intention to cause indiscriminate destruction.<sup>5</sup> The birth of Agent Orange, on the other hand, was not so straightforward.

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<sup>5</sup> (although arguably, not all consequences such as the health effects of radioactive fallouts were accounted for at the first)

## **Rise and Fall of Agent Orange**

- 1867 Discovery of inorganic pesticide, Paris Green
- ~1900 Darwin discovers 'circumnutation'
- 1907 *Hague Convention IV: The Laws and Customs of War on Land*
- 1925 *Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*
- 1926 Fritz Went discovers plant hormone, auxin
- 1930s Scientists search for agriculturally useful auxins
- 1941 Robert Pokorny synthesises 2,4-D and 2,4,5-T
- 1941 Beginning of World War II
- 1941 Ezra Kraus forms Chemical herbicide research team at Fort Detrick Chemical and Biological Weapons Division
- 1945 DuPont and American Chemical Paint Company awarded patent for 2,4-D and 2,4,5-T
- 1945 End of World War II
- 1945 Dow Chemical, Sherwin-William *et al* challenges DuPont and AmChem patent
- 1945- 2,4-D and 2,4,5-T hailed as miracle herbicides
- 1950 Einstein calls for membership of Society for Social Responsibility of Scientists
- 1962 Chemical Herbicides used in Vietnam War**
- 1962 Thalidomide Crisis**
- 1962 Rachel Carson's *Silent Spring* published**
- 1964 *The Washington Post* reports accidental spraying of chemical herbicides on friendly village of Cha La
- 1964 Gulf of Tonkin Incident
- 1965 Protest against the use of chemical herbicides in the US
- 1966 American scientists begin voicing concerns over the use of chemical herbicides in Vietnam
- 1968 Fred Tschirley commissioned by the US State Department to conduct ecological survey in Vietnam
- 1969 Report on teratogenic effects of 2,4,5-T on laboratory mice leaked
- 1969 President's Science Advisor, Lee DuBridge announces termination of the use of 2,4,5-T in Vietnam War
- 1970 The word 'ecocide' used at the *Congressional Conference on War and National Responsibility*
- 1971 The use of 2,4,5-T discontinued

### CHAPTER 3 RISE AND FALL OF AGENT ORANGE

During the Vietnam War, several different blends of herbicide chemicals were used. These chemicals were referred to as ‘Agent X’, where X was replaced by the colour of the stripe painted on the drums containing each type of chemical. What became known as ‘Agent Orange’ was a mixture of chemicals called 2,4-dichlorophenoxyacetic acid (or 2,4-D) and 2,4,5-trichlorophenoxyacetic acid (or 2,4,5-T). It was the most commonly used herbicide during the Vietnam War. Others included Agent Blue, Purple, Pink, and White. Blue, which contained arsenic compound called cacodylic acid, was a specialised crop-destroying agent. White, which contained 2,4-D and picloram, occasionally substituted for Orange toward the end of the 1960s when the supply of 2,4,5-T fell behind the rising demand for the war in Vietnam. Pink and Purple were used in smaller quantities earlier in the war but was replaced later by Orange and White.<sup>1</sup> Each of these chemicals was considered problematic for different reasons during the second half of the 1960s by protesters of the US herbicidal warfare program. But 2,4-D and 2,4,5-T in particular, were thought to be something quite different from other herbicides.

‘Agent Orange’ has been called a defoliant, herbicide, ‘anti-plant’ agent, toxic chemical and even chemical weapon. In the 1950s, the component chemicals of Agent Orange—2,4-D and 2,4,5-T—were hailed as new and promising weed-killers. The newspaper ads from that period

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<sup>1</sup> Although in this chapter I often group together these chemicals as ‘herbicides’, it is important to keep separate the inorganic herbicides like cacodylic acid from other herbicides like 2,4-D and 2,4,5-T. The latter types of herbicides are sometimes called ‘phenoxy-herbicides’ or ‘hormone herbicides,’ and their origin owes much to the development in biology and biochemistry rather than in chemistry.

describe them as “The Weed-Killing Miracle: New and Improved Wee-Done”<sup>2</sup>; “The Modern Methods”<sup>3</sup> in the “War on Weeds.”<sup>4</sup> But by 1971, when its use in Vietnam as a military herbicide was finally terminated, this mixture of ‘miracle herbicides’ had fallen from its grace. It was given a sinister name like “Agent Orange,” (Newton and Young 2006) which was immediately associated with “fetal malformation.”<sup>5</sup> It has been accused of being an agent of ‘ecocide’<sup>6</sup> and as a weapon comparable to atomic bomb dropped in Hiroshima and Nagasaki.<sup>7</sup> How did these seemingly benign and quite beneficial herbicides used in agriculture and forestry, become such terrible, wicked, evil things in the span of merely two decades? The answer to this question laid not so much with the changing nature of the chemicals themselves, nor with the changing manners of their use (although scale at which these chemical herbicides were employed in Vietnam was very different). It was the changing context of scientific knowledge and moral values that led to this change in the value of the chemicals which came to be known as ‘Agent Orange’. This chapter follows the biography of Agent Orange in relation to the wider history of environmental consciousness and the ethics of science in the second half of the twentieth century.

### ***Galston’s Angst***

In 1947, Arthur Galston, who would later become a vocal advocate against the use of chemical herbicides in the Vietnam War, was visited by two scientists from the Biological and

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<sup>2</sup> “The Weed-Killing Miracle: New and Improved Wee-Done” New York Times May 27, 1951

<sup>3</sup> Woodward, Carol. 1953. “The Modern Methods of Removing Unwanted Trees” New York Times, March 29, 1953

<sup>4</sup> Woodward, Carol. 1953. “War on Weeds”. New York Times, Feb 8, 1953

<sup>5</sup> “Scientists Assail Vietnam Method”. New York Times, Aug 29, 1971

<sup>6</sup> Nelson, Bryce. 1971. “On the Planet Polluto”. New York Times, April 25, 1971

<sup>7</sup> “Hanoi Sees Birth Defects” New York Times, Dec 30, 1970

Chemical Warfare Division at Fort Detrick, Maryland. The scientists that appeared in his office at Caltech were plant physiologists, Geoffrey Norman and Robert Weintraub. They were scientists involved in the development of the military herbicides like 2,4-D and 2,4,5-T. Years later, Galston would remember with a chagrin that these two military scientists came to thank him for the data presented in his doctoral dissertation, which helped them in their own research at Fort Detrick in developing what would become the basis for Agent Orange (Galston 2001).

Galston's relationship to the herbicide was as complicated and as paradoxical one as the origin of the herbicide itself. As many young plant physiologists working in the field of plant hormones in the 1930s and the 1940s, Galston's work on triiodobenzoic acid (TIBA) had aspiration to be applied research. In Illinois where he worked on his doctoral study, soybean was one of the promising agricultural products in the 1930s. Yet, at the time, it was not quite an economically viable crop, because when frost came too soon in the fall in Illinois, it destroyed the plants before they could develop pods. Galston hoped to speed up the flowering of soybeans in order to increase its harvest through the synthetic plant hormone, TIBA. He was largely successful in this quest, and his findings were later patented by International Mineral and Chemical Company ('unbeknownst' to him, he later writes) (Galston 2001).

An ironic side-note to his accomplishment was that during his investigation, he also discovered that when his growth substance was applied at higher concentration, instead of leading to greater growth, soybean plants began to shed their flower buds and even leaves. This was what Galston would later remember as his accidental complicity in the birth of Agent Orange.

Decades later, he would contemplate on his responsibility for his role in the development of Agent Orange, and the scientists' responsibility in general for the social consequences of their discoveries. The question was whether or how scientists were responsible for the unintended or unforeseen consequences of their scientific activities. In the course of the development of Agent Orange, several conceptual shifts occurred both in scientific framework and moral discourse, such that the scientists who were working on the theories that led to the development of this herbicide could not have felt guilty conscience or even imagined its future consequences when they were working on their own projects. This chapter describes this jagged life trajectory of the development of Agent Orange.

### ***Prehistory***

The history of chemical pesticides takes us back to the end of the nineteenth century. It was in 1867 that Paris Green, a pigment which had been used for decades in wallpapers and paints, began its career as a pesticide (Whorton 1974). Its insecticidal property was first discovered—quite by accident—by an unnamed farmer in the Midwestern United States, who carelessly discarded the remainder of the paint he was using on his walls over his potato field. That year, there was an infestation of Colorado beetles, which was causing a lot of damage to the potato fields in the Midwest. The farmer, who threw his paint (which happened to contain Paris Green) on his potato field had thought that his potatoes were already lost. But the paint killed off the beetles, and the potatoes were left unscathed. Soon, the news that the paint pigment, Paris Green, is effective against beetles without harming the plants spread by word of mouth among the farmers who also

had their hands tied by the beetle-infestation that year.

Paris Green was also known as copper acetoarsenite. Arsenic substance was a known poison for centuries. Some of the nineteenth century physicians had noted intoxications due to the wallpapers containing Paris Green (Whorton 1974). For this reason, there were some concerns for the possibility of its poisonous effects on potato plants themselves and on the humans who would consume them. Such initial caution, however, was soon forgotten. And the use of Paris Green as insecticide grew steadily in the second half of the nineteenth century. Toward the end of nineteenth century, other arsenic insecticides also appeared. Lead arsenate, which was the most popular insecticide until the discovery of DDT during the World War II, was introduced in 1892 in order to combat the Gypsy moth epidemics.

These arsenic pesticides were certainly effective, but for the purpose of agriculture, there were also some problems. What was effective toward one insect species was also effective for other insect species. What was harmful to insects can also be harmful to plants, and what damaged plants—eventually with the accumulation of the chemicals—led to poisoning of the soil. While the sensitivity to a specific chemical varied across species, arsenic pesticides were typical poisons; it harmed whatever life it came across. The new pesticides like DDT, 2,4-D and 2,4,5-T, which came into the market in the post-World War II era, were quite different. Herbicides, 2,4-D and 2,4,5-T, in particular, were originally born out of a research to find plant growth promoters—rather than plant killers—and their greatest appeal was the selective nature of their effects (Hildebrand 1945). In fact, they were not supposed to be poisonous to animals at all.

### ***Origin of Hormone Herbicides***

The new herbicides like 2,4-D and 2,4,5-T emerged out of research on hormonal control of plant growth in the 1930s and the 1940s. A historian David Zierler (2008) traces the genealogy of plant hormone research back to Charles Darwin's study of 'circumnutation,' or bending of plant stem. Toward the end of his life, Darwin became interested in the phenomenon in which plants exposed to light seemed to beckon toward the light source. This process of circumnutation suggested to him that there was a mechanism that allowed one region of the plant to stimulate another region such that it changed its cellular morphology. The question was how this happened (Zierler 2008, Rasmussen 2001). Darwin, of course, knew nothing about 'plant hormone' back then, but the puzzle he pondered over in the final years of his life gave the subsequent scientists a project to explore.

Plant physiologists in the early decades of the twentieth century tried to discover how plants regulated their growth. By the First World War, it was discovered that signalling mechanism involved in this process was mediated by chemical substances. In 1926, a Dutch graduate student named Fritz Went isolated a molecule that seemed to regulate the plant growth. He named this substance, *auxin*. For the next decade or so, scientists in Europe and America raced to discover different kinds of natural and synthetic auxins in order to understand the structural requirement and the mechanism of how plant growth regulators functioned.

Up to this point, the original interest in plant growth substance was developed largely in the area of basic science. During the interwar period between the two World Wars, hormones were



thought to be the prime example of ‘master molecules.’ It was believed then—in the manner we now think of genetics—that understanding the functional mechanism of hormones would ultimately give the humanity access to the secret of growth control and other ‘vital phenomena’ of plants and animals (Rasmussen 2001: 295). Soon, plant scientists began to dream of harnessing the technology of hormonal growth control to increase harvest in agriculture.

This development in science coincided with a revival of Malthusian theory of population growth during the interwar period. The mass starvation following the Russian Revolution and the Great Depression in the West drew attention to the possibility that one day population growth would out-pace the feeding capacity of the nations (Zierler 2008). Something had to be done to increase the agricultural capacity. This general climate of urgency gave the impetus for scientists to apply synthetic growth hormones in agriculture.

At self-anointed ‘humanitarian’ oriented research institutes, such as Boyce-Thompson Institute, researchers made it their explicit agenda to discover various synthetic plant hormones that could be used in agriculture (Rasmussen 2001). One group, led by Percy Zimmerman at the Institute, tested many synthetic chemicals pushing the boundary of *auxin* well beyond the structures and functions resembling that of natural plant hormones. Some of these synthetic hormones included chemicals that promoted rooting of cuttings and the chemicals that prevented fruits from dropping before harvest. In the 1940s, these synthetic substances were patented and made available commercially. One thing to note, however, was that none of these patents licensed before 1941 mentioned the use of synthetic hormone as herbicide.

### ***Discovery of 2,4-D and 2,4,5-T***

2,4-D and 2,4,5-T, which eventually became the dominant herbicides in the post-War era, were first synthesized by an industrial chemist named Robert Pokorny (1941) in 1941 (Butler 2005). Pokorny was the first to write about 2,4-D and 2,4,5-T in a scientific publication,<sup>8</sup> but he was hardly the inventor of ‘herbicide 2,4-D’ and ‘herbicide 2,4,5-T’. His short communication published in 1941 on the *Journal of American Chemical Society* was devoted to describing the process of chemical synthesis. It made no mention of biological effects of the chemicals in question.

What ‘scientific discovery’ means and how it occurs has been one of the major questions in philosophy and history of science. Since Thomas Kuhn’s *The Structure of Scientific Revolution* (1962), the dominant understanding in science studies has been that the scientific discovery of a fact in nature goes hand-in-hand with the development of conceptual framework that allows the scientists to *see* this fact. The observation alone does not allow researchers to recognize new objects or new phenomenon in nature. As Kuhn (1962) taught us, this discovery entails recognising *that* something is (i.e. its existence) and *what* it is (i.e. its characteristics), often both requiring the existence of the other for the scientists to discover a new phenomenon.<sup>9</sup>

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<sup>8</sup> see also Claus Jacob and Adam Walters (2005). Jacob and Walters attempt to assign responsibility for something like the discovery of Agent Orange. As an industrial chemist, he may have expected the potential of these chemicals in agriculture, his main goal was the synthesis of the chemicals and it is likely that he did not even know about its precise effects.

<sup>9</sup> Kuhn (1962) suggests that the question about the ‘discovery’ of oxygen, is particularly problematic one because it occurred alongside a paradigm shift in chemistry. He asks, ‘If we say that oxygen was ‘discovered’, what does that entail?’ Clearly, having a mixture of gas containing oxygen in a bottle does not constitute a discovery. Because oxygen is invisible, the discovery of oxygen necessarily requires a realization that there is something there, and an identification of what it is. In Kuhn’s term the discovery of new phenomenon entails recognising “that something is

This dialectic process is not immediate and not necessarily accomplished by the same individual. *What* something is, is often multiple; there are as many identities of phenomenon or objects, such as synthetic chemicals, as the number of conceptual paradigms in which they are characterized. If we are to ask who discovered (or invented) the *chemicals* 2,4-D and 2,4,5-T, for example, there is no doubt that it was Pokorny, because it was he who brought these novel entities into the world by synthesising them. But if we are to talk about the discovery of *herbicides* 2,4-D and 2,4,5-T, we might argue that Pokorny made only the first half of that discovery, because aside from the chemical formulas and its chemical characteristics, Pokorny did not know anything about the biological characteristic of 2,4-D and 2,4,5-T. The second half of the discovery—i.e. recognizing their herbicidal potential—is said to have been made independently by several different research groups in Britain and the United States during the Second World War.<sup>10</sup>

### ***Kraus at Fort Detrick***

In fact, as late as 1941, few scientists thought of using synthetic auxins as herbicides. During the 1930s, several scientists like Arthur Galston had stumbled across what might be called ‘overdose effect’ of growth hormones. As mentioned above, when a growth substance was applied

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and what it is” (Kuhn 1962: 55). Only when there are conceptual categories prior to it, can simultaneous discovery of that and what occur. But such cases are rare. So, these categories are created as a process, in a cyclical manner involving mutual formations of theories and objects. Lavoisier’s discovery of oxygen was closely linked to his theory of combustion. The suspicion that something went amiss with the earlier Phlogiston theory led Lavoisier to think of a new theory, to which oxygen gave additional support. Thus the existence of oxygen and the theory of combustion mutually played accomplice to each other’s claim; theory and the object which gave support to it developed hand-in-hand.

<sup>10</sup> For detailed discussion of this simultaneous scientific discovery by multiple research group, see Troyer (2001), Rasmussen (2001), Zerlier (2008).

at higher concentration, instead of leading to a greater growth, the plants began to die.<sup>11</sup> By 1940, therefore, the potential for using synthetic hormones as herbicides was available for some time, at least in theory. The herbicide research, however, stalled for no apparent reason. This overdose effect of growth hormone was considered to be undesired side-effect, or mere anomaly within the existent paradigms of hormone research. What altered the situation had nothing to do with the observation of new facts about synthetic hormones; it was the beginning of the World War II.<sup>12</sup>

The wartime patriotism and the mobilization of science in the development of new weaponry ushered a small paradigm shift within plant hormone science, shifting its focus from growth to destruction. The prime instigator of this conceptual leap was a man named Ezra Kraus, who was the chair of the University of Chicago's Department of Botany. Toward the end of 1941, just as Japanese military was plotting its attack on Pearl Harbour, Kraus drafted a paper outlining the possible use of "growth destroying substances" for military operations. Subsequently, in 1942, barely a month after the Japanese attack, Kraus approached the US military with a suggestion to develop synthetic chemicals that could be used to destroy rice crops in the war on Pacific theatre (Rasmussen 2001: 301).

Imagine how radical this idea was at the time. Kraus came up with a proposal for *military use* of hormone herbicide when the scientists were still making rudimentary discoveries about herbicidal effects of plant hormones (Zierler 2008: 65). Nonetheless, Kraus found ready audience

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<sup>11</sup> Folke Skoog and Kenneth Thimann 1934 may be the first publication on this. (Folke Skoog and Kenneth V. Thimann, "Further Experiments on the Inhibition of the Development of Lateral Buds by Growth Hormone," *Proceedings of the National Academy of Sciences* 20 (1934), 482-483, cited in Zierler 2008: 55)

<sup>12</sup> Historian Nicolas Rasmussen (2004) argues that there was a 'cognitive block' that prevented the scientists to switch their research focus; 'growth promotion' and 'growth inhibition' seemed at first to be incommensurable aspects of life.

at the Department of Defence. His proposal was accepted and he was immediately put to task to form a team of scientists at Fort Detrick's newly established Chemical and Biological Warfare Division.<sup>13</sup> By the end of the war, his group had tested over a thousand synthetic auxins for herbicidal effects. The hormone herbicides that appeared most promising turned out to be Pokorny's 2,4-D and 2,4,5-T.

Ironically, if their original goal was to find hormone herbicides for killing rice crops on the Pacific front, they were not altogether successful. While 2,4-D and 2,4,5-T were effective against broad-leafed plants and woody plants, they were not very effective against rice plant. Inorganic herbicides like arsenic thallium were far more effective. In fact, when the war in Vietnam began two decades later, the most common herbicides used for rice crop destruction was not Agent Orange but Agent Blue, which contained arsenic herbicide, cacodylic acid. This is why, in the early days of campaign against the herbicidal warfare in Vietnam, American scientists noted their particular concern about Agent Blue. The potential health hazard of Agent Orange in particular came to public attention relatively late in the decade of anti-Vietnam War protests.

### ***Claiming Credit***

During the World War II, biologists and chemists employed at Fort Detrick were not the only scientists working on the development of hormone herbicides. Several laboratories associated with chemical companies like Dow Chemical, DuPont, American Chemical Paint and

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<sup>13</sup> He was well-positioned for this task, as he had inside connection to scientists at Bureau of Plant Industry of the US Department of Agriculture, and his faculty position at a prestigious university allowed him to gather many promising young scientists at Fort Detrick's newly established Chemical and Biological Warfare Division.

Sherwin-Williams were also exploring commercial potential of hormone herbicides. Because wartime censorship suppressed any scientific publications and patent applications relevant to war effort, each group worked on more or less the same substances in relative isolation. By the time the war was over, these laboratories almost simultaneously claimed to have discovered the herbicidal potentials of 2,4-D and 2,4,5-T. The ambiguity regarding the true discoverer of these herbicides led to a great hoopla when different laboratories competed for patent claims (Troyer 2001).

In the United States, two chemical companies, DuPont and American Chemical Paint Company, had been awarded patents for 2,4-D and 2,4,5-T before the end of the war. Both patent claims, however, lacked in robustness, at least not enough to hold off their contenders' claim. For example, DuPont's patent application of 2,4-D listed as their uses, functions like strengthening stems to prevent fruit and leaf from dropping, and stimulating root formation, and so on; but it did not mention its herbicidal action. Franklin Jones' patent for American Chemical Paint Company, on the other hand, mentioned herbicidal actions of both 2,4-D and 2,4,5-T. But the priority of his discovery was challenged by various parties who suspected that Jones acquired his knowledge from his competitors, while they were still bound by wartime censorship (Ibid.).

Once the war was over in 1945, Bureau of Plant Industry at US Department of Agriculture and chemical companies like Sherwin-Williams and Dow (which would later become the largest supplier of the herbicides to the US military during the Vietnam War) challenged the patent of American Chemical Paint in court. Kraus, who was widely acknowledged to have made the crucial contribution as the head of herbicide research program at the US military, also produced an

affidavit to the court in opposition to Jones' patent claim. In the end, the contenders came to no definite conclusion on who should be given credit for the invention of *herbicides* 2,4-D and *herbicide* 2,4,5-T (Rasmussen 2001).

With the culmination of war, the chemical industry, whose production capacity increased greatly through wartime infrastructure, immediately realised the enormous potential for profit in hormone herbicides. Some of these companies so eagerly sought out the talents of Fort Detrick scientists in the postwar era that the survival of the military herbicide group itself was put in question (ibid.).<sup>14</sup>

### ***War on Weed***

With the end of the War on Nazis and Fascists, hormone herbicides emerged out of wartime secrecy with full glory into the era of new 'War on Weeds.'<sup>15</sup> As the matter of fact, in terms of publicity, the chemical companies jumped the gun by several months. Before the official wartime censorship was lifted, just as the end of the war came into sight, the news of hormone herbicides began to trickle out of the industry (Rasmussen 201: 309). As early as January of 1945, farming and gardening magazines like *Country Gentleman* and *Better Homes and Gardens* carried articles anticipating the new herbicides that were to be available that year. These herbicides, consisting of

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<sup>14</sup> Rasmussen's historiography, from which I draw most of the information here (along with Zierler), seems to take the transition from growth promotion to herbicide an inevitable process. He talks about 'cognitive block' that obstructed plant physiologists from moving to herbicide research when theoretical provision was already available. This view seems a little too deterministic. An interpretation more in line with contemporary theories of scientific development is that at the beginning of the war, the pendulum of growth and death could have swung in either direction. It presented a singularity point. The wartime necessity tipped this toward herbicide development due to the in-surge of funding. Once the practical know-how and infrastructural provision is accumulated, herbicide option became a more preferable option.

<sup>15</sup> Title of Hildebrand's (1946) article.

2,4-D and 2,4,5-T, promised a brand new way of combating garden weeds like poison ivy and Japanese honeysuckle.

The transition from wartime patriotism to postwar bravado in “War on Weeds” went rather smoothly. In *Better Homes*, Japanese honeysuckle was referred to as ‘Jap invader’, which apparently “ha[d] taken over large areas in the eastern United States” (cf. Rasmussen 2001: 309). Left unchecked, it would overwhelm the orchards like a “green wave...flowing relentlessly over the landscape.” But fear not! New and improved herbicides would aid the nation in this new war on its home turf.

Curiously, in these descriptions, weeds were personified and characterised in a manner we may now associate with chemical pesticides. Weeds in the post-war era were something “out of place”, an insidious danger waiting in hiding, just like we now think of insidious risks of toxic chemicals in the environment. E. M. Hildebrand (1946) wrote in journal *Science* in 1946 that “most of the noxious weeds are aliens or exotic [and it] can cause losses in many and *devious* ways.” (Hildebrand 1946). Wartime xenophobia was now transferred to this new enemy: the weed.<sup>16</sup>

While such metaphors produced continuity with the recent past, the economic metaphor offered new logic and legitimacy to the use of new herbicides. “Weeds function as an unseen tax on the crop harvest.... [They] rob farmers in the United States of \$3,000,000,000 a year” (Hildebrand

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<sup>16</sup> Mary Douglas and Aaron Wildavsky (1982) wrote that people’s sense of risk is entangled with their xenophobic rejection of things that disturbs or do not fit within their categorical world view. Weed is to be destroyed because it invades the agricultural land and gardens when it should stay out in the fields and forests. Chemical pesticides can be used to combat this threat. In the post-1960s industrialised society, chemicals themselves became something fundamentally ‘out of place’ in this natural world.



1946). New herbicides like 2,4-D and 2,4,5-T were cheap and efficient means of weed control, which could save money for the farmers in the long run.

It was not only such clever sales-pitch that contributed to the explosion of market for the new herbicides. The litigation between different contenders of patent for 2,4-D and 2,4,5-T, which took place between 1945 and 1947, virtually annulled the patent requirement. This left the herbicide industry wide-open for any companies to enter and compete for profit without the fear of patent infringement, contributing to the explosion of cheap and abundant herbicides in the market.

Soon, herbicides containing 2,4-D and 2,4,5-T became widely available to ordinary gardeners and farmers. They were given various names such as ‘Weedone,’ ‘Weed-No-More’ and ‘Weed-Be-Gone’, and as peace settled and World War II was well behind them, these herbicides became staple chemicals in American agriculture and gardening. During this period, the most often cited motif in the advertisements for the herbicides was the effectiveness of the new herbicides in maintaining perfect lush green lawns (Rasmussen 2001). The new herbicide was an essential item in maintaining what was becoming the ideal of American suburban lifestyle in the post war era.

During the 1940s and the 50s, optimism ran so high, the promise of the advantages new herbicides brought seemed so unequivocal, that few suspected of the toxic effects of 2,4-D and 2,4,5-T. This is not to say that there were no indications of their toxic effects. There were (as I explore in further detail in chapter 5). But the scattered reports found no anxious audience, and few scientists and public health professionals made much fuss about testing the chemicals. In part this

was because these new herbicides were considered to be so radically different from traditional herbicides like arsenic based herbicides.

Arsenic herbicides were definitely poisonous. In contrast, as Hildebrand wrote, hormone herbicides “operate[d] on the principle of growth regulation rather than caustic action or poisoning.” The discovery of such herbicides was thought to mark “a new departure in the history of herbicides and promises in the future to prove particularly rewarding” (Hildebrand 1946: 467).

But what did Hildebrand mean by ‘poisoning’ here? As I will discuss further in chapter 5, the changing notion of poison in the second half of the twentieth century was directly involved in our perception of risk and responsibilities toward nature and the effects of industrial chemicals. At this point in history, however, hormonal control of growth and decay of plants was not considered a poisonous effect. Few would have thought that massive use of such chemicals would lead to poisonous effects on the planet as a whole, as Bryce Nelson (1971) would call “Planet Polluto” in the 1970s. And fewer still would have imagined that half a century later, a mixture of 2,4-D and 2,4,5-T, now code named ‘Agent Orange’, would be accused of committing a war crime, poisoning unborn children and causing cancers in exposed population. It was not until the 1960s that any significant challenge was made against this confidence in new herbicides.

But the seed of the demise of these herbicides was already cast in the decades prior to it.

### ***Scientific Discovery and Responsibility***

While 2,4-D and 2,4,5-T were developed during the Second World War, in the end, these herbicides, or any other chemical weapons developed at Fort Detrick, were never used during

World War II. As far as the scientists involved were concerned, the reason was simple. The only thing that prevented the United States from using the herbicides was the timing: the war ended before the chemicals were ready for field testing (Zierler 2008). By the time of the Second World War, the Geneva Protocol of 1925 was already in place, prohibiting the use of poison gas weapon. Scientists working on chemical and biological warfare projects in the 1940s, however, seldom had moral qualms about their role in the war (ibid.). World War II was a moral war, a good war; the victory against the Nazis and the militarist Japanese was not an option. For this end whatever means were justified. In this general climate of crisis and justice, few scientists questioned the wisdom of offering scientific expertise in service of war effort.

This situation would begin to change in the post-war era. During the Second World War, an unprecedented number of scientists were enlisted for the war effort. In the United States, by far the most striking example of the heroism and atrocity of scientists' role in military research was the Manhattan Project. In the 1950s, under the threat of impending nuclear holocaust, some scientists in the West began to voice their concern about the responsibility toward the destructive consequences of their scientific activities.

One of the groups that had a significant hand in this reflexive awakening was the Society for Social Responsibility of Scientists (SSRS) (Moore 2008). It was founded by Quaker scientists in the post-war era as a mutual support group for conscientious objectors to military related research. At first, the number of its members was rather limited. The conscientious objectors during the World War II were few in number in general, and many scientists quite willingly contributed to the

weapon's research. This intimate link established between scientists and the military continued in the postwar era under the Cold War regime. In the 1940s and the 50s, the largest source of research funding in science was military contracts. In 1958, for example, 74% of all funding in science in the US came from the Department of Defence (ibid.). The largest sum of funding went to the physicists.

Perhaps for this reason, physicists were also among the first scientists to talk about the responsibility of scientists toward the consequences of their own scientific activities. Particularly vocal were the atomic scientists who were involved in the Manhattan Project. It is well known that Robert Oppenheimer, who headed the Project, and Albert Einstein, who proposed the project to Roosevelt during the war, were ambivalent about the development of nuclear weapons after the war.<sup>17</sup> The awesome destructive power of the nuclear bomb had shocked the international community, and made some scientists to halt and consider their moral responsibility in participating in developing such a weapon. In a letter addressed to the scientific community in 1950, Einstein wrote thus:

External compulsion can, to a certain extent, reduce but never cancel the responsibility of the individual. In the Nuremberg trials this idea was considered to be self-evident (Einstein 1950).<sup>18</sup>

In Nuremberg trial which took place after the war, some of the Nazi scientists were tried for their complicity in war crime committed by their nation. The Allies scientists were not prosecuted,

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<sup>17</sup> During the McCarthyism era of 1947-54, scientists like Oppenheimer and Einstein became subjected to investigation by the national security system.

<sup>18</sup> Einstein based the intractability of individual responsibility on Nuremberg trial, which ruled that individual morality must trump state intention in some occasions.

but there was no guarantee that the same would hold true in the future. In the earlier years of SSRS, their main focus was the individual responsibility of scientists (Moore 2008). Their main goal, therefore, was to provide mutual support for conscientious objector-type scientists who refused military contracts and funding.

Toward the end of the 1950s, however, the view stating that scientists had responsibility toward the *field of science as a whole* began to spread. Even if the research itself had no direct consequence on the war, research findings can be used by other scientist for the development of weapons, as the history of the development of Agent Orange described above shows. This awareness of unintended consequences of scientific activities was becoming increasingly salient in the 1950s. It was in this context that, in 1962, America's largest 'chemical warfare' would begin in Vietnam.

### ***Operation Ranch Hand and the Opposition of Scientists***

January 18, 1962—*New York Times* reported that “a mixture of chemicals” was sprayed by airplanes along Saigon-Saint Jacques highway which lay just south of Saigon en route to a popular seaside resort American diplomats frequented.<sup>19</sup> The jungles flanking the highway had been infested with Viet Cong guerrillas for some time now. “It has been unsafe for months,” it reported, “and the diplomats with seashore villas have had to travel by air.” The Americans hoped that the defoliation would remove the forest-cover for the Viet Cong ambush. As if as an afterthought, it also mentions that there was a plan to use the ‘defoliant chemicals’ on maniocs and sweet potatoes

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<sup>19</sup> US Spray Strips Foliage Hiding Vietnam Reds, *New York Times* Jan 19, 1962.

in the guerrillas' plantations in the highlands.<sup>20</sup> The spraying would be accompanied by dropping of pamphlets assuring the local farmers that the chemicals were harmless to humans and animals.

This was the beginning of America's decade-long chemical warfare in Vietnam, code named 'Operation Ranch Hand.' Over the next ten years, the use of chemical herbicides in forest defoliation and crop destructions spread throughout South Vietnam. But in 1962, the news that the US military used chemical herbicides received little attention in the West—let alone a wide outrage it would eventually cause there.

The situation had begun to sour for the US military by 1965. On December 21st, 1965, *New York Times* carried another story about rice crop destruction missions using chemical defoliants (Galston 1965). There is no mention of the specific chemicals used here, but instead, it quotes an official who described the chemical as “commercial weed killer, identical with a popular brand that many Americans spray on their lawns.” Food that survives the chemicals, it said, “will not be toxic or unpalatable.” Despite such careful disclaimers (presumably to counter the Communist accusation that the Americans conducted chemical warfare in Vietnam, which was becoming frequent), the news caught the public attention—this time also in the West.

What changed the situation? Why did the use of chemical herbicides in warfare, which went largely unheeded until then, suddenly become a source of great agitation in the United States and

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<sup>20</sup> New York Times article says that this comment about crop destruction came from a high South Vietnamese official (US ally). The US denied that crop destroying agent was being used for crop destruction. (Washington Post Feb 24 1962). Pentagon denies charge Defoliation Kills Crops. According to Stellman et al (2003) Agent Purple was used for defoliation and Agent Blue was used for crop destruction in 1962. It appears that the crop destruction program began with the request from the South Vietnamese. The US publicly rejected the idea at first, but during 1962, the idea gained a degree of acceptance within the US State Department and Department of defence. (Cecil (1986: 38)

the rest of the West?

1962 was an eventful year. Besides the beginning of Ranch Hand Operation, it was also the year the thalidomide crisis exploded in countries like the United States, Japan and Europe. This crisis involving iatrogenically induced birth defects allegedly caused by a morning sickness drug, *thalidomide*, soon became proverbial. For example, in 1970, in arguing for the immediate termination of the use of Agent Orange in the wake of the evidence that 2,4,5-T caused deformity in mice fetus, Arthur Galston would write: “Must we wait for definite proof of an abnormal birth before we are prepared to act? *Have we learned nothing from the thalidomide tragedy?*” (Galston 1970a, my italic). As I will discuss in further detail in Chapter 6, this thalidomide incident altered the field of toxicology greatly in the 1960s, and offered powerful image and precedence to the anti-Agent Orange protest.

It was also in 1962 that Rachel Carson’s *Silent Spring* (1962) was published. Carson linked chemicals like DDT, benzenes and dioxins, now known to be ubiquitous in the environment, with the public’s growing preoccupation with cancer and birth defects. Key to her alchemy was the idea of ‘the ecological web of life’. Carson’s success lied not only in her extensive knowledge of biology and her literary ability to make this accessible to general public, but in her ability to bring together previously scattered knowledge in ecology, chemistry, medical science and politics into a comprehensible form of invisible pollution that threatened the ‘liveable’ environment, and to give agency to this impending ecological catastrophe.

The chemical industry, which was the prime target of her criticism, objected, and immediately moved to a counteroffensive. The protest against the use of Agent Orange in Vietnam War and the reaction against it developed alongside the development of this new environmental consciousness.

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On May 26th 1965, Washington Post carried a scoop on an accidental destruction of the crops in friendly village of Cha La in Ca Mau peninsula by an American airplane.<sup>21</sup> What deepened the irony of this incident was that Cha La village had just been wrested from the Vietcong guerrillas, and was set up as a 'model village' where Vietnamese peasants were to experience the "fruits of democracy and the support offered by the American-backed Saigon government." But now its rice paddies and pineapple trees were turning brown and dying—all because of the American chemicals.

This time the news caught the attention of some Americans. With the escalation of the US war in Vietnam, following the Gulf of Tonkin Incident in 1964, the profile of the Vietnam War in the consciousness of American public was growing, along with the anti-war sentiment which began to spread in the West.<sup>22</sup>

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<sup>21</sup> "Error Destroys Crops of Model Viet Village." Washington Post May 26 1964

<sup>22</sup> The uneasiness about the herbicide program in Vietnam was first raised in the United States in 1964 (Hay 1982). The condemnations of American herbicidal warfare shifted in its focus throughout the 1960s. Prior to 1965, there were scattered charges by the Soviets and the North Vietnamese that the United States perpetrated a 'germ and poison gas warfare.' During this time, the chemical herbicides were often thrown together with tear gases under the name of 'poison gas,' and the accusation was largely propagandistic and legalistic.

At first, in the United States, these charges were largely dismissed as baseless Communist propaganda, and the media focused on the responses of its own government. After 1965, however, when Western scientists and activists joined the protest, the chemicals began to be referred more specifically as 'defoliants' and 'tear gases,' or even by their scientific names such as 2,4-D, 2,4,5-T and CS gas (eg. Herbicide Described, New York Times, July 26 1969). The arguments for protest also became more sophisticated focusing on the specific characteristics of the chemicals used and the nature of their specific offences against nature and human welfare.



Meanwhile, the defoliation program in Vietnam was also stepped up. The amount of herbicides dispensed by Ranch Hand went up from just below 1 million litres per year in 1964 to about 2.5 million litres in 1965, and over 10 million litres in 1966 (Stellman et al 2003).<sup>23</sup> Between 1962 and 1971, almost 75 million litres of herbicides were sprayed over almost one tenth of the landmass of South Vietnam, including, in one estimate, almost one half of all arable lands (Stellman and Stellman 2004).<sup>24</sup>

In the United States, some of the earliest concerns about the Ranch Hand Operation came from scientists (Hay 1982: 152). Scientists lauded for their contribution during the World War II were now being called ‘baby-killers’, who sold their souls to military industrial complex. But some of scientists provided one of the most vocal critiques of US conduct in Vietnam. For example, in 1966, Zoologist E. W. Pfeiffer called on the Pacific Division of American Association for the Advancement in Science (AAAS) to conduct an investigation into the Ranch Hand program. In September the same year, a group of prominent plant physiologists represented by Arthur Galston wrote a letter to President Lyndon Johnson expressing concerns about the herbicide program in Vietnam (Galston 1967).<sup>25</sup>

We would assert in the first place that even the most specific herbicides known do not affect only a single type of plant. Thus, a chemical designed to defoliate trees might also

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<sup>23</sup> 1965 was also the year when the specific mixture of the chemicals which would be known as ‘Agent Orange’ first came into use.

<sup>24</sup> This, in later estimate, released almost 360kg of TCDD dioxins into the environment. See also Ngo Vinh Long. (1970). Ngo claims that 3.8 million acres of arable land was sprayed with American herbicides. 1000 peasants died from its direct consequence and 13000 heads of livestock. He claims to have taken this statistics from Yoichi Fukushima’s study, but does not provide us with a reference.

<sup>25</sup> Galston and the plant physiologists were not the only ones that began to voice their concern that year. The Regional Division of American Association for the Advancement of Science (AAAS) passed a resolution submitted by a zoologist, E. W. Pfeiffer to call for an ecological investigation in Vietnam. (Galston 1967)

be expected to have some side effects on other plants, including food crops. Secondly, the persistence of some of these chemicals in soil is such that productive agriculture may be prevented for some years into the future, possibly even after peace has been restored. Thirdly, the toxicology of some herbicides is such that one cannot assert that there are no deleterious effects on human and domestic animal populations. It is safe to say that in the absence of more definite information, such an upset could be catastrophic.<sup>26</sup>

The herbicides 2,4-D and 2,4,5-T which were touted for their selectiveness became non-selective at doses over 3 pounds per acre (Perry 1968). At high dosage used in Vietnam, possible long term deleterious effects on the ecology and the economic capacity of post-war Vietnam could not be ruled out. There were also concerns over the human health hazard. This Galston's letter effectively delineated each element of what would become a three-pronged assault of anti-Agent Orange protest in the West. The targets of their protest included its potential effects on the 1) environment, 2) food production and 3) human health.

A significant aspect of this letter was the scientists' attitude toward uncertainty. Identifying themselves as "socially concerned scientists", Galston and his associates envisioned their intervention into the national affair to be one based on science and bioethics, rather than parochial environmentalism or radical pacifism (Zierler 2008). At this historical juncture, however, the scientists' claims faced a dearth of persuasive evidence. While there were scattered reports on the toxic nature of 2,4-D and 2,4,5-T during the 1950s, the health risk posed by Agent Orange and its toxic contaminant, dioxin (this risk was largely about a skin condition called chloracne), did not

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<sup>26</sup> This letter was circulated in October 31, 1966, gathered 5000 signatures and was filed in Feb 1967 (Neiland 1972)

become public knowledge until 1969 (even then, this knowledge was contested). The long term ecological effects of herbicides were not difficult to imagine, but there was no precedence of the use of herbicides on such an enormous scale to have allowed them to substantiate this prediction. It was not until 1968 that the first ecological survey in Vietnam by Fred Tschirley was commissioned by the US State Department in order to assess the effects of Operation Ranch Hand on the environment.<sup>27</sup> Scientists who opposed the use of the herbicides in Vietnam, therefore, did so not so much because of the scientific evidence they had in hand that made its crime stand out in comparison to all other crimes of the war. The scientists knew intuitively that it was evil before they knew why; to some extent, the reason had to be invented *ex post facto*.

This can also be gleaned from the rather eclectic and flexible arguments scientists made in order to condemn US herbicidal warfare during the late 1960s. For example, when scientists found out that crop destruction was largely conducted using arsenic herbicide, they expressed special concern about the crop destruction operations.<sup>28</sup> When they found out that picloram in Agent White, which was beginning to replace 2,4,5-T in Agent Orange, was more persistent in soil, they said that 2,4,5-T was a ‘lesser of two evils’, and recommended reverting back to the use of 2,4,5-T instead of picloram (Galston 1969).

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<sup>27</sup> The study by Fred Tschirley commissioned by the US State Department in 1968 was limited because he was only able to do base it on observation from air. In 1969, Egbert Pfeiffer and Gordon Orians obtained funding from Society for Social Responsibility of Science to conduct an independent study in Vietnam. Their conclusion was that the herbicides were of great value to American military (and it did save American lives), but it also caused massive ecological devastation. However in the fall that year, the focus dramatically altered following the news that 2,4,5-T caused malformation in mice fetus. (Hay 1982: 157-158)

<sup>28</sup> Until then, the prime target of the scientists’ criticism was not 2,4,5-T. As late as July of 1968, Board of Directors of the American Association for the Advancement of Science was expressing “especial concern about the use of arsenical herbicides in Vietnam.”(Price et al 1968: 254)

This was in 1969, the very same year when the news that 2,4,5-T caused fetal malformation in mice came out to the open. Once this news became public knowledge, the campaign against the herbicide program found its champion case in 2,4,5-T and Agent Orange. Until then, the scientists searched for the evidence which could put a nail to the coffin in vain.<sup>29</sup>

In the mid-1960s, one thing more certain than health hazard was that the herbicides the Americans were using was having an enormous effects on the Vietnamese environment. But if there were evidence of massive ecological destruction taking place in Vietnam, there were no suitable moral and legal concepts to convincingly argue to the wider public that it was as bad as the protesters felt in the context of already horrible war. It was in the course of the protesters' search for reasons against the Ranch Hand Operation that the concept of 'ecocide' emerged. But let me leave the discussion of this concept to the chapter and conclude this chapter by returning to Arthur Galston.

## ***Conclusion***

In one of the numerous interviews he did just before his death in 2008, Arthur Galston, recalled (Zerlier 2008):

I used to think that one could avoid involvement in the antisocial consequences of science simply by not working on any project that might be turned to evil or

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<sup>29</sup> In 1968, American Association of Advancement of Science issued a resolution singling out Agent Blue as of particular concern for health hazard (July 1968) "We express especial concern about the use of arsenical herbicides in Vietnam". By 1970, it was all about Agent Orange. July 1968 paper also express concerns about 2,4-D and 2,4,5-T, which were suspected to cause chromosomal damage on plants. In April 1969 Arthur Galston recommends in the journal *Science*, to use only "readily biodegradable phenoxyacetic acids, rather than using picloram which stays in the soil for much longer." (Picloram in Agent White was not authorized to use in the United States on crops, and in one experiment they found that less than 4% was lost after 467 days (Neilands 1972))

destructive ends. I have learned that things are not all that simple....The only recourse for a scientist...is to remain involved with it to the end. (Zierler 2008)

In retrospect, Arthur Galston, who had firsthand experience of inadvertently taking part in a research that was later misused for destructive purpose, argued that scientific discoveries are in themselves neither good nor bad. Einstein's discovery of mass-energy conversion, for example, was ethically neutral on its own. When it was used to generate power through nuclear reaction, it was constructive. But when it enabled the invention of atomic bomb, it was definitely destructive. Depending on how they are used, scientific knowledge can be made to do harm or good for society. Individual scientists can never know the full consequence of their discoveries, and neither can they take responsibility for all later uses of their research findings. Thus Galston agrees that one cannot condemn scientists for the unintended consequence of their discoveries years later; nor is it possible to pre-emptively refrain from doing any research that might be misused. But in the context in which rapid population growth and the depletion of natural resources increasingly forces us to 'live by our wits', scientists cannot refrain from doing certain scientific research just because it might in a long run have adverse consequences. This, however, does not exonerate scientists of their responsibility toward the social consequences of their discoveries, says Galston. His solution to this conundrum was to stay engaged with the problem.

Many scientists are now coming to feel that they cannot surrender control of their findings to businessmen, politicians or others for indiscriminate and unregulated use in social or military context. ... the scientist *wants* to concern himself with the social consequences of his discoveries. (Galston 1971)

Let us now turn to the story of how scientists like Galston protested the use of Agent Orange during the Vietnam War under the shifting moral landscape regarding environment and intentions that surrounded it.

### *Ecocide and Lawfare*

“The North Vietnamese are fortunate—they have only bombs to contend with”, Thomas Perry (1968) wrote thus in 1968 in journal *Science*. North Vietnamese were suffering from American aerial bombings; in the South, in addition to bombings, they were also facing the consequences of chemical herbicides like 2,4-D, 2,4,5-T, picloram and cacodylic acid. These chemicals killed vegetation, insects and wild animals, and (he adds as if as an addendum) “a few humans have either migrated or died of starvation” as a result of it.

In hindsight, Perry was quite right. We now know, more or less, that the chemical herbicides caused cancer and birth defects in humans. We now know, more or less, that ecological damage Operation Ranch Hand had in South Vietnam was, if not permanent, long-term. But this knowledge came relatively late (1969) in the history of the US herbicide program during the Vietnam War. Then, what made Perry imagine in 1968 that the destruction of the environment and human suffering as a *consequence of this environmental destruction* as something as terrible or worse than the direct casualty caused by the B-52 bombing that was happening also in the North?

In the course of the War, the concept of a new kind of international crime of warfare was born. It was modeled after the already familiar crime of *genocide*; but instead of applying to massive extermination of humans, it referred to massive destruction of the environment. The word they invented was ‘*ecocide*’.

To give a historical digest of the concept of ecocide: in the late 1960s, ecocide emerged as one of the key ingredients in the protest against the use of herbicide in warfare (Zierler 2008); subsequently, ecocide in Vietnam became a premonition for an ecological catastrophe on a planetary scale (Nelson 1971); today, some people argue that ecocide ought to be acknowledged as an international crime on a par with genocide and crimes against humanity (cf. Jowit 2010). But in the 1960s, the ideas embodied in the word ‘ecocide’ were still only beginning to emerge. While many felt abhorrence toward such large scale destruction of environment, legally and morally the chemical herbicide operation, known as Ranch Hand Operation, still remained on the borderline of acceptability.

Everyone agrees that war is terrible. Grief and suffering it causes are unmatched by most facets of human experience. But under the present international legal order such sufferings are justified to some extent. Ordinary laws and moral norms of peacetime are suspended in wartime. Violence and destructions are condoned as ‘military necessity.’ Murderers become heroes; and the sufferings and losses of civilians caused by ‘collateral consequences’ of the war often go uncompensated—all under the context of war, which is considered, in principle, to be a legal means of resolving international conflicts. Then what makes Ranch Hand Operation so special that warrants condemnation over all other vices of the war? How did we come to perceive this use of chemical herbicides in war to be as terrible as intentional military operation meant to kill other human beings through the uses of bombs and bullets?



For the anti-Agent Orange protesters in the 1960s, it was not enough to claim that the use of the herbicides in war was a ‘bad idea’; they had to make a case that it was a terrible, abominable act. How did it come to bear the stigma of an evil deserving the name of war crime and crime against humanity in the face of already terrible war?<sup>1</sup> These are the questions we explore in this chapter.

### **‘Lawfare’**

Although war is thought to be the time when law is suspended, increasingly warfare and military conducts are regulated by laws, both domestic and international, to the extent that some now even talk of ‘lawfare’. Protests against war take on the argument that the particular war is ‘illegal’, while the military and the militarist politicians legitimize killing through the same laws (Kennedy 2006). Historian David Zierler (2008: 20) argues that in the mid-1960s, when some scholars and activists in the West began to argue that the American aggression in Vietnam was illegal, the question that was truly vexing “was not *if* but *how* the war was illegal.” Under this context, the use of chemical herbicides in Vietnam became one of the reasons why Vietnam War was illegal.

Since the early-1960s, the Soviets and North Vietnam had been accusing the United States of committing war crimes in South Vietnam.<sup>2</sup> They argued that the use of herbicides along with the use of tear gases was a violation of international laws prohibiting the use of chemical weapons.

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<sup>1</sup> And this was also the necessary criteria in the consideration of retroactive justice and post-war compensation in the litigation, *VAVA v. Dow et al* (2004).

<sup>2</sup> “Washington Rebuts Poison Gas Charge”, *New York Times* March 11, 1963. “Germ-War Charge is Denied by Saigon”, *New York Times*. March 12 1963. “Soviet Note Assails U.S. ‘Poison Gas’; Embassy Rejects It”. *New York Times* March 27, 1965. “‘Crime,’ Peking Declares” *New York Times*, March 24, 1965. “Hanoi Charges U.S. Tests Chemicals in South Vietnam”. *New York Times*, August 23, 1965.

The proscription against the use of poison and poisoned weapon in the Hague Convention IV of 1907 and the prohibition of ‘asphyxiating gases’ in the Geneva Protocol of 1925 potentially applied to the US use of the chemicals in the Vietnam War.<sup>3</sup>

The US government retorted that the chemicals they used in Vietnam did not meet the criteria of chemical weapon specified in the Geneva Protocol. Chemical herbicide was not asphyxiating gas. Furthermore, unlike tear gases, none of the herbicides used in Vietnam were in existence in 1925.<sup>4</sup> The Hague Convention of 1907 was a conventional law that codified the treatment of prisoners and hospital facilities and the kind of weaponry the belligerents could expect not to be employed by their enemies. These conventions, however, were still rudimentary, and the delegates at Hague understood that customary international law norms were also part of the treaty (Bederman 2001). This reliance on customary law introduced an additional source of ambiguity to the Hague Convention, which already lacked in specificity, such that it allowed each nation-state to interpret the rules in their own ways. For instance, the proscription against the use of ‘poison or poisoned weapon’ in the Hague Convention was taken by the belligerents of the First World War *not* to include the use of “chemical gas weapons designed and intended to be lethal, such as shells containing chlorine or mustard gas” (Weinstein 2005:183). The 1925 Geneva Protocol prohibited the use of asphyxiating and poisonous gases, among other things. But the very fact that the Protocol was proposed in response to the experience of the First World War left it open to the

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<sup>3</sup> “Cambodian Charges Baseless, U.S. Says” (Jul 31 1964), “Soviet Scores U.S. over ‘Poison Gas’.” (Mar 26 1965)

<sup>4</sup> In fact, as I discussed in the previous chapter, hormone herbicides like 2,4-D and 2,4,5-T were virtually inconceivable at the time when the law was promulgated, so here was the question of *nullum crimen, nulla poena sine praevia lege poenali* (No crime, no punishment without a previous penal law).

interpretation that the “customary norm evidenced by this treaty would only have covered the types of gases used in World War I” (Kaye 2005: 383).<sup>5</sup>

So was the modern herbicide which was unimaginable in 1925 proscribed by the Protocol? In 1961, when Kennedy Administration considered the pros-and-cons of the herbicidal warfare, there was a certain level of concern from both civilian advisors and military generals that such use of chemicals in war may leave them open to the accusation of barbarism.<sup>6</sup> The Administration also expressed anxiety over the legality of the herbicide, and repeatedly considered—and repeatedly rejected—the possibility that the use of defoliants would be a violation of “rule[s] of international law concerning chemical warfare [or it] is an accepted tactic of war.”<sup>7</sup> By the 1960s, the repertoire of chemical substances available for warfare had expanded far beyond what was imaginable in the 1920s. In this context, what constituted a ‘chemical warfare’ was not clear.<sup>8</sup> Moreover, in ratifying the 1925 Geneva Protocol in 1975, “the Senate emphasized its understanding that the United States’ prior use of herbicides in Vietnam had not violated the treaty and that the United States only intended the Protocol to be prospective in effect” (Weinstein 2005: 214).<sup>9</sup> Technology advances;

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<sup>5</sup> See Appendix 2.

<sup>6</sup> VAVA v. Dow et al. Amended Complaint 66-68.

<sup>7</sup> Weinstein 2005. VAVA v Dow et al. Judgement to dismiss. p. 64, p.168.

<sup>8</sup> There was a historical precedence to this situation. During the World War I, both Germans and the Allies used chemical agents like chlorine and mustard gas, but neither thought that it was in violation of Hague Convention of 1907, which prohibited the use of ‘poisoned weapon’. The Geneva Protocol was promulgated specifically in order to expand the scope of the Hague Convention to include the chemical gas weapons used during the World War I. Once again, half a century later, the same sort of legal question was raised: Was chemical herbicide prohibited by Geneva Protocol? Did the scientists who participated in the development of these herbicides during the Second World War have any moral quandary as people felt toward chemical gases used during the First World War?

<sup>9</sup> The plaintiffs claim in the second circuit court that one violation of customary international law does not liquidate the law itself. With all these ambiguities involved, in his memorandum in the Vietnamese Agent Orange litigation, Judge Weinstein argued that, during the Vietnam War,

[while] Congress and the President were fully advised of a substantial belief that the herbicide spraying in Vietnam was a violation of international law, they acted on their view that it was not a violation at the time.

weaponry evolves. Whether the herbicides, such as Agent Orange that came to existence after the Second World War, were prohibited by the customary norm during the Vietnam War was questionable.<sup>10</sup>

For the large part of the 1960s, the most visible crime of Agent Orange was its environmental destruction. However, when the scientists and activists were still trying to formulate their strategy to effectively protest against the US herbicidal warfare in Vietnam, the environment as a moral entity *deserving protection for its own sake* was still insufficient to persuade the US government to terminate its herbicide program. Legally, the concept to condemn environmental destruction in war simply did not exist until the 1970s.<sup>11</sup> For the protestors of Agent Orange, the closest legal instruments available to condemn the Ranch Hand Program were the prohibitions against the use of poison and chemical gas weapons in the Hague Convention of 1907 and the Geneva Protocol of 1925. However, as we already saw, the United States administration had insisted that these conventions did not include the use of herbicides, which were not intended to harm humans. What this meant was that the condemnation of Agent Orange had to base itself on the human

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A jointly held position of the other two independent branches of government should cause a court to reconsider carefully its disagreement (2005:213).

<sup>10</sup> Under the legal framework, therefore, the criticism of tear gases such as CS gas fared slightly better in the debate because of the specific proscription against the use of 'asphyxiating gases' in the Protocol. (Moore 1972: 466) The US Department of Defence, however, insisted that the use of riot control agents which are also used in peacetime cannot be considered a war crime. The herbicides, as I already mentioned, were also chemicals used domestically. It was difficult to prohibit the products in wartime when it was licensed domestically in peacetime. There was also the question as to whether the prohibitions delineated in the Protocol applied to the United States, which had not ratified the Protocol. This controversy continued among the legal scholars well into the 1970s leading up to the Geneva Protocol I and Environment Modification Convention of 1977. (Diederich 1992.)

<sup>11</sup> By the time the Stockholm Declaration of the United Nations Conference on the Human Environment took place in 1972, the Ranch Hand Operation had already been terminated. The international humanitarian laws such as laws on war crime and crimes against humanity made no direct reference to environment until 1977 (Diederich. 1992).

*consequences* of these environmental destructions. But where does ‘consequence’ (whether intended or unintended, foreseen or unforeseen) lie in the legal and moral order of our time?<sup>12</sup>

### ***Ecocide and Moral Theories***

The term ‘ecocide’ made a rather dramatic entry into the anti-Vietnam War politics in 1970. At the Congressional Conference on War and National Responsibility, Arthur Galston (1970c) put it thus:

After World War II, and as a result of the Nuremberg trials, we justly condemned the wilful destruction of an entire people and its culture, calling this crime against humanity *genocide*. It seems to me that the wilful and permanent destruction of environment in which people can live in a manner of their own choosing ought similarly to be considered as a crime against humanity, to be designated by the term *ecocide* (71-72).

The concept of genocide was already an established international crime codified in the Genocide Convention of 1948. It had a paradigmatic historical antecedent of Jewish holocaust, and for over a generation it was a concept which resonated most closely with the word ‘evil’. Ostensibly, the concept of ecocide expanded the scope of genocide to include the environment.

This was a tricky move for a couple of reasons. It required them, first of all, to make the destruction of the environment somehow comparable to other war crimes in which human lives are lost. As the protest against the use of herbicides in Vietnam mounted, so did the argument questioning the ethical consequence of equating the destruction of environment with the

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<sup>12</sup> Today, the idea that a massive environmental destruction in a limited war is inexcusable may be readily accepted. But in the 1960s, it was only a burgeoning idea. The idea of the ‘biosphere’ as an object of moral responsibility on its own did not come to exist until the 1980s (cite). The ecological sensibility popularised by Rachel Carson’s *Silent Spring* was still considered radical at the time. The concept of ‘ecocide’ was born out of such a need to moralise the massive ecological devastation meted out by America’s chemical warfare.

destruction of human lives. An American psychologist Leuba Clarence (1969), for instance, complained that people were overly “concerned for the effects of defoliation in Vietnam on plants and animals there [when] the purpose of defoliating these jungle areas [was] to save American and South Vietnamese lives.”<sup>13</sup>

Secondly, there was a question of intentionality. The US military argued that the long term destruction of the environment—if it indeed existed—was a collateral consequence of trying to defeat the enemy soldiers: not something systematically conducted as an intended end (this became one of the central issues in the lawsuit *VAVA v. Dow* in 2004). If the ecological damage caused by the defoliation had human consequences, as the protestors claimed, they remained hypothetical. Was it justified, then, to be so concerned with such indeterminate and hypothetical consequences when conventional weapons are claiming tolls on human lives all around them? The patterns of destructive will beneath the threshold of conscious intention had to be moralised and become condemnable within the landscape of anti-Vietnam War protests in the 1960s.

It is often said that Western moral philosophy can be divided into two separate theoretical camps of consequentialism (or utilitarianism) and deontology (Hacking 1995). To put it simply, the consequentialists base their moral judgement of an act on its consequences. For them, an act is bad if it leads to overall bad consequences regardless of the intention of the doer. Deontologists, on the other hand, argue that there is a categorical imperative to do or refrain from doing a certain

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<sup>13</sup> I imagine by South Vietnamese he meant ARVN soldiers.

thing. In this case unintended consequences of an action are secondary.<sup>14</sup> Kantian scholars place high importance on intention. Evil is an evil, because of the evil will. Criminals are defined by their criminal intent. Unintentional evil, then, is an oxymoron according to Kantian morality.

According to philosopher Elizabeth Anscombe (1958), neither of these approaches provides the content of morality.<sup>15</sup> For example, if consequentialists say that Good act is defined by “good consequences”, we need to have an idea of what good consequences are. Deontologists may exalt ‘conscience’, but they say nothing about what makes this conscience good. The conscience may tell us to do the vilest things (as, perhaps, Eichman’s testimony in Jerusalem shows (Arendt 1963)). Kant’s notion of legislating for oneself can also lead to the detriment of the whole society (Anscombe 1958).<sup>16</sup> However, notwithstanding numerous difficulties in founding morality on these two theoretical camps, they provide tools in situations in which moral issues are debated, and inform discussions about laws.

The concept of ecocide seems to lie largely under the consequentialist framework. Ecocide was conceived as an environmental counterpart of genocide. But most deontologists believe that there is no categorical imperative prohibiting the destruction of the environment. For them, there is a clear distinction between humans and other entities, so the offence against the environment was incomparable with the offence against other human beings such as murder.

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<sup>14</sup> For example, killing one to save one hundred is wrong under this theory.

<sup>15</sup> Anscombe considers both consequentialism and deontological theories and concludes that it is not useful to do moral philosophy until we have a better philosophy of psychology. For example, she says, “In present-day philosophy an explanation is required how an unjust man is a bad man, or an unjust action is a bad one; to give such an explanation belongs to ethics; but it cannot even be begun until we are equipped with a sound philosophy of psychology.

<sup>16</sup> As in Nazis who believed wholeheartedly that the elimination of the Jews was a good thing. See also Arendt’s Eichman in Jerusalem.

The incommensurability of our moral imperative toward other human beings and the environment can also be seen in our attitude toward long term consequences. In case of genocide, even if a group of people experienced a rebound in population after it was reduced by a genocidal episode, it would not change the nature of the episode as genocide. In case of ecocide, however, it is not the same thing. What mattered was the consequence in the long run; not the temporary offence against a part of the nature.<sup>17</sup>

In this respect, the early proponents of the concept of ecocide like Arthur Galston differed considerably from the later ones like a British environmental lawyer, Polly Higgins.<sup>18</sup> While Higgins, speaking in the twenty-first century, would like to moralise the environment in of itself, for Galston ecocide was bad because of the consequence of environmental destruction on the lives of human beings.<sup>19</sup>

Since the beginning of Operation Ranch Hand, the United States government had insisted on two points: that the herbicides used had no harmful effects on humans and animals, and that there was no long term ecological consequences.<sup>20</sup> As late as 1968, Pentagon was claiming (following the study by Midwest Research Institute) that “long term effects on wildlife may be beneficial or detrimental,” because for some species of animals such as “rare kouprey and ancestral bovine”,

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<sup>17</sup> This incommensurability of human life and ecological system is also expressed in the differences between human health risk and ecological risk assessment in the 1990s (Silbergeld and deFur 1994).

<sup>18</sup> By now we have witnessed the difficulties of proving causation. But in Galston’s time, this probably was not the primary concern.

<sup>19</sup> David Zierler (2008) writes that Galston see himself separate from parochial environmentalists and more closer to European intellectuals like Sartre.

<sup>20</sup> “US Spray Strips Foliage Hiding Vietnam Reds” New York Times Jan 19 1962. “US Tells of Crop Destruction in South Vietnam” New York Times Mar 10 1966. “Defense Issues Summary of Defoliation Study”. Science February 9, 1968. etc



changes in the ecosystem can actually be beneficial (Boffey 1968). Nature was an aggregate entity; the destruction of one may result in the prosperity of the others.

In the second half of the 1960s, however, the destruction of the forest began to look total. The nature of Ranch Hand Operations also shifted. The forest defoliation was meant to protect American soldiers from ambush during their offensive, as well as to expose the Communist supply line from North Vietnam. As the war dragged on, however, what was supposed to be a temporary *defoliation* at first became more like permanent *deforestation*.

A typical Ranch Hand mission, for example, in Truong Son Mountains consisted of C-123 flight missions spraying the chemicals on the targeted areas three times, separated by an interval of a few weeks each.<sup>21</sup> After the first run, the top canopy would fall off. After the second, lower foliage would be targeted. The last spraying would finish off the shrubs on the ground. Once all vegetations were dry and bare, they returned with B-52 bombers and napalms which would set what used to be a formidable jungle ablaze. This way, they did not have to return every year to clear the foliage. ‘Long term’ in the definition of the US military (who insisted that there were no ‘long term’ ecological effects of Ranch Hand Operations) became longer and longer as the prospect of ending the war became increasingly bleak.

The purpose of crop destruction also changed as Americans realised that their previous tactic of ‘food denial program’ was not working.<sup>22</sup> Originally, the Ranch Hand Operation was intended

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<sup>21</sup> An ecologist in Hanoi, personal communication.

<sup>22</sup> Crop destruction program which began in 1962 took the form of the US response to the request from the Saigon government, and it was exclusively Vietnamese airforce that took part in the crop destruction spray mission. It was not until 1964 that Ranch Hand took over the crop destruction missions. Once Ranch Hand took over the crop destruction,

to destroy food crops in the highlands in order to deny food to the guerrillas and thereby demoralise and starve them.<sup>23</sup> By 1967, they were spraying herbicides on friendly villages with the intention to move the peasants into ‘strategic hamlets’ (Ngo 1970).

Ranch Hand Operation had terrible consequences on both humans and the environment; but these consequences were not the ultimate goal of the mission. Furthermore, if the environmental destruction meted out by Ranch Hand was bad, it was because it ultimately harmed humans.<sup>24</sup> This may explain why there was a particular emphasis on the protest against crop destruction in the late 1960s. In 1966, when Galston and his colleagues wrote the letter to President Johnson, the only thing they could say with any confidence was that the famine caused by the crop-destruction program in Vietnam was already claiming tolls on civilians (“inevitably children, especially those under five,” as they emphasised). Conventional weapons destroy lives and maim people; but chemical herbicides create, years after the war, the condition in which people cannot produce food to feed themselves (Diererich 1992.). Isn’t wilfully produced starvation of civilians as bad as massacre by bombs and bullets? they argued.

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its nature also changed. The South Vietnamese air force (ARVN) used helicopters to spray the chemicals. The Americans used C-123 fixed winged air plane, so the scale and the possibility of drift increased. (Cecil 1986: 39-50)

<sup>23</sup> In response to Galston and other biologists assistant secretary of State, Dixon Donnelley wrote, “food is as important to the Viet Cong as weapon” (Editorial, Bioscience, 1967)

<sup>24</sup> This, however, enters us into a vexing debate about whether there is indeed harm done to humans, and whether it was intentional, expected or unexpected consequences. In the twenty-first century, environmental lawyer Polly Higgins argues that if the environmental destruction itself is considered a crime, then this debate can be skirted. But in the 1960s, this argument was not an option.

The keyword for ecocide was the ‘consequences’: the unintended consequence of destruction of crops and forests on human life. This consequentialist basis of ‘ecocide’, however, did not sit well with deontological basis of the international laws that followed Nuremberg (Robertson 2006).

It is said that the International Humanitarian laws that came to existence out of the wreckage of World War II had a distinctively Kantian outlook. At the time of their conception, the authors of the Declaration of Human Rights took much pain to seek legitimization of the universality of this Universal Human Rights by carefully avoiding references to any religious values. Thus, instead of invoking Gods or scriptures, the authors of the Declaration resorted to Kant’s categorical imperative (Robertson 2006: 39). The conventions on war crimes and genocides that followed are also said to have adopted this general undercurrent. Genocide, for example, was defined in the Convention as a systematic destruction “with *intent* to destroy, in whole or in part, a national, ethnical, racial or religious group” (my *ital*).<sup>25</sup> If it were to be thought of as crime without exception, *mens rea* (guilty conscience) must be built into the concept of genocide (Bedau 1973). Then as long as there was no evidence of such intention, it was nonsense to compare ecocide to genocide. Or, was it?

### ***Genocide and Intention***

At the Russell International War Crimes Tribunal in 1967, Jean-Paul Sartre (1968) raised the question whether the American aggression in Vietnam was genocide. The ‘colonial war,’ as he called it, was intrinsically genocidal in character. The maintenance of colonial order required

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<sup>25</sup> Genocide Convention cited in Weinstein 2005. Judgement to Dismiss p. 179

‘admonitory massacres’ to intimidate the ‘natives’ into submission. But by the time of the Vietnam War, “this blatant aggression kindled the hatred of civilian population, and since civilians were potentially rebels and soldiers, the colonial troops maintained their authority by terror—by perpetual massacre.” What this entailed was not just massacre but ‘extermination’.

[V]illage burned, the populace subjected to massive bombing, livestock shot, vegetation destroyed by defoliants, crops ruined by toxic aerosols, and everywhere indiscriminate shooting, murder, rape and looting. This is genocide in the strictest sense: massive extermination.” (P. 73).

Sartre did not argue that the US military had an *expressed* intention to systematically eliminate the Vietnamese “either in entirety or in parts.”<sup>26</sup> Such expressed intent of genocide is virtually impossible to come by unless the perpetrator is foolish (or insane) enough to announce it (like Hitler). Instead Sartre argued that “the genocidal intent is implicit in the facts” (Sartre 1968: 72). There were plenty of signs that suggested this intent. Genocide was the logical imperative of colonial wars like Vietnam War.<sup>27</sup>

Legal scholars like Louis Pollak (1970), on the other hand, insisted that what happened in Vietnam did not meet the definition of genocide according to the Genocide Convention. At the Congressional Conference on War and National Responsibility in 1970, Pollack argued that the lack of intention to systematically eliminate Vietnamese (who were also allies) made it seem unlikely to fit the description of genocide.

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<sup>26</sup> and other scholars like Hugo Bedau (1973) and Richard Falk (1975) who largely agreed with him

<sup>27</sup> While Sartre’s work appealed to many European intellectuals, it was widely criticized and disregarded by many intellectuals in the United States as anti-American Communist propaganda at the time, except for people like Galston. (Allan Young, personal communication)

This did not mean that Pollack did not find American war in Vietnam terrible. He said that he was puzzled at how “the offences in Vietnam [did] not seem to have been as *eloquent*” (my ital cite); genocide in Vietnam somehow paled in comparison to Jewish Holocaust. One would think, however, that *an event* is neither ‘eloquent’ nor ‘banal’ in of itself; only the *descriptions* of the events are. In *Contingency, Irony and Solidarity*, Richard Rorty (1989) argues that it is the task of intellectuals and artists to render an event eloquent so that we recognize the cruelty and abhorrence in certain acts or events.<sup>28</sup> Pragmatist philosophers like Richard Rorty believe that it is a folly to look for the foundation of morality either in the consequences of an action or in its intrinsic nature in order to promote our own moral norms to the others. The expansion of certain moral ideas occurs through ‘sentimental education,’ whereby people are sensitised to new vices and virtues and taught moral ideas through imaginative practices.

One might say that pragmatist theory represents a third branch of moral theory. Against the foundationalist moral theories (like deontology and consequentialism), Rorty contends that all philosophers can do is to summarize intuitions regarding moral issues. What such summarizing generalization accomplishes is that one brings together a moral community who shares the compatible moral intuition. From Plato and Kant, foundationalists have claimed that there is a basis for certain morality which can even correct moral intuition if it were wrong. Rorty thinks that the changes in morality come from manipulation of feelings rather than from increasing moral knowledge or rational argument. Rorty argues:

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<sup>28</sup> Just like scientists working under different paradigms, people working under conflicting moral paradigms cannot be reconciled with each other by resorting to reason (at least it is not efficient to do so).

sensitizing an audience to cases of cruelty and humiliation which they had not noticed – is not usefully thought of as a matter of stripping away appearance and revealing reality. It is better thought of as redescription of what may happen or has been happening – to be compared, not with reality, but with alternative descriptions of the same events (1989:173).

We might also understand the works of anti-Vietnam war activists like Sartre and Galston in this light, as a project to expand the moral concepts so that evil— recognizable even in the context of war—came to include the utter disregard for the humans and their environment.<sup>29</sup>

In the United States, the expressed intention to liquidate the Vietnamese was not entirely absent among the American statesmen. Occasionally, this tacit will was expressed in racism-inflected commentaries of careless politicians and military officers. To “bomb [the Vietnamese] back to Stone Age,” as the famous quote of Secretary of State Robert McNamara goes, was a logical imperative for winning the war. To quell the rebelling populous, whose culture went against the enlightened vision of America, one needed to “level everything,” as an American diplomat in Laos once said. “The inhabitants must go back to zero, lose their traditional culture, for it blocks everything” (Chomsky 1970: 134).

One manifestation of such general will was the “strategic hamlets.” The Vietnamese peasants herded to these camps were “reduced to a living heap of vegetable existence” (Sartre 1968). Families are fragmented; cultures destroyed. This psychosocial consequence of the camp, argued Sartre, was genocide “causing serious bodily or mental harm to members of the group,” as stated in Genocide Convention.

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<sup>29</sup> See Appendix 3

This relocation of peasants into camps reflected the nature of American war in Vietnam. A neo-conservative scholar Samuel Huntington once said that Vietcong was a “powerful force which cannot be dislodged from its constituency so long as the constituency continue[d] to exist.”<sup>30</sup> It was a logical imperative for the Americans to try to sever the Vietcong from its peasant constituency—even if it meant using force or chemicals to move peasants from their home.<sup>31</sup> “Against the enemy who had the support of the populous, the only solution to the problem of colonial army was to ‘empty the sea of its water,’” wrote Sartre, citing the famous quote of a Maoist tactician.<sup>32</sup> In order to poison the fish, opposing army had to risk polluting the water. This tactic, however, backfired at them—no surprise—as more Vietnamese peasants angered by American bully-tactics fled to the hills to join the Viet Cong (Kolko 1985). While this added to the unpopularity of the crop destruction program among the anti-herbicide campaigners in the West, it also gave the US military another reason to suspect the Vietnamese peasantry.<sup>33</sup> Civilian and forests, after all, were the only visible enemies. As the war progressed, the total annihilation of the

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<sup>30</sup> Samuel Huntington cited in Chomsky (1970: 128)

<sup>31</sup> At first, it seems, they used pamphlets and soldiers to force people to move to strategic hamlets. But it was less economic than using chemicals. They figured it made no difference whether they forced the peasants at gunpoint to move or sprayed chemicals to move them.

<sup>32</sup> Sartre (1968). Although it was absolutely true that overwhelming proportion of civilian casualty of terrorism was caused by Americans, the unity of the populous Sartre spoke of was probably unrealistic. As Honda Katsuichi, a Japanese journalist, wrote on the refugees from the free fire zones of the South Vietnam, it was unrealistic to think that the rural peasants were wholly committed to either the National Liberation Front or the Americans. Most people simply wanted to be left alone. (Minami 1999) But this does not really matter as long as this is what the American military leaders believed. It is ironic that the Maoist strategist boasting his tactic in guerrilla warfare gave idea to the generals of the opposing army the option of genocide as imperative.

<sup>33</sup> As I already mentioned, this particular concern about crop destruction (as opposed to forest defoliation) was further pronounced when it became known that Agent Blue, which was the chemical herbicide specialised for crop destruction contained arsenic substance, cacodylic acid. As arsenic substance was a familiar poison for a long time, it gave the scientists special reason for caution. (Price et al 1968)

populous offered itself as the only solution to ending the war. As Sartre argued, “whatever lies or euphemisms the government may think up, [this] spirit of genocide is in the minds of the soldiers”.

Take, for instance, this report from 1965 by a journalist Jack Langguth (1965). In Mekong Delta, Langguth met an officer of a helicopter unit, who was about to return to the United States after a year of service in Vietnam. They were speaking about the gloomy situation in his province of ever ending the war, when Langguth asked: “What’s the answer?”

“Terror,” he said pleasantly. “The Vietcong have terrorized the peasants to get their cooperation, or at least to stop their opposition. We must terrorise the villagers even more, so they see that their real self-interest lies with us. We’ve got to start bombing and strafing the villages that aren’t friendly to the Government.”

Even if such intention was not explicitly stated by the government spokesperson, the individuals on the ground may be more frank or “eloquent” about such hidden will.

Sartre, however, argued that the individual soldiers were not to be blamed. As a troubled young soldier reportedly said upon returning from his ten-month torturing mission in Vietnam, “any one in [the same situation] would have acted as [he] did.” This was because what made the genocidal acts of American soldiers in Vietnam inevitable was the structure of the society itself.<sup>34</sup> Even the government and the military had little choice.

The American government is not guilty of inventing modern genocide, or even of having chosen it from other possible and effective measures against guerrilla warfare. It is not guilty, for example, of having preferred genocide for strategic and economic reasons.

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<sup>34</sup> What happened to Nuremberg, one might ask. The individual responsibility that was said to persist in spite of the overwhelming pressure of the society to commit crimes against humanity?



Indeed, genocide presents itself as the only possible reaction to the rising of a whole people against its oppressors (Sartre 1968).<sup>35</sup>

Social scientists would recognize immediately this pattern of argument. Scholars have come up with words like ‘symbolic violence’ (Bourdieu 1990) and ‘structural violence’ (Farmer 2004) to persuade us that there are predicaments just as bad, or worse, than physical violence. They wanted to convince us that consequences are the same, even if subjective intentions were absent.

Throughout the 1950s and the 60s, postcolonialist and feminist critiques had begun to raise the issue of such hidden violence of patriarchal colonial order. These types of violence were sometimes invisible if we only paid attention to conscious decisions and intentions of the actors.

What was worse than malice was the indifference of an aggressor with far greater power. The language involved in protest against Agent Orange fed and was fed by these developments in postcolonial thinking.

Sartre contended that at the bottom of American genocide in Vietnam, there was racism running deep within American culture. Yet despite all the evidence of racism, frustrations and the desire to eliminate the culture of Vietnamese people, I do not think we would find in the leaders of the nations the confession of their intent to eliminate the people of Vietnam “either in parts or in whole.” Genocide in Vietnam, if there were such thing, was not a manifestation of a single unified will but an assortment of wills. Such will was a disembodied intention discernible, not in the

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<sup>35</sup> After all this contemplation about cultural, socio-psychological genocide, Sartre settles on the “structure’ like a good Marxist.

consciousness of individual actors, per se, but in the overall cultural proclivity and patterns of political and military decisions.

When Franz Fanon described the colonizers' mentality in the colonial war in Algeria in *The Wretched of the Earth*, he could have been writing about Americans and Vietnamese.

[A] colonized people is not only simply a dominated people. Under the German occupation the French remained men; under the French occupation the Germans remained men. In Algeria there is not simply the domination but the *decision to the letter to occupy nothing else but a territory*. The Algerians, the women dressed in *haiks*, the palm trees and the camel make up the landscape, the *natural* background to the human presence of the French....

Under Nazi 'final solution', Jews were humans to be eliminated. But as Pollak (1970) remarked, the massacres in Vietnam "appear to have been offences against people who were not regarded as human at all, rather than against people whom there was an attempt to destroy in whole or in part."

If Vietnam were to turn Communist it would be better if it did not exist at all. But this was not because Americans hated Vietnamese. Nor did they have any malicious intent against them. Like the people of Algeria, the people of South Vietnam simply did not deserve the contempt and cruelty in being subjected to the cruellest of all acts. It was because there was a "*decision to the letter to occupy nothing else but a territory*". Thus the famous theme of 'bamboo curtain'. Forests were defoliated with chemicals to erase any distinguishable features that might lend the anonymous enemies further disguise. And in the land rendered empty after the spraying, grew

bamboos and grasses locals called ‘American grass’ (because they were the first species to return) which prevented the re-growth of original vegetation.

Here, the commands of nullification and liquidation were not only figurative. Early in the war, some military generals pressed for the use of nuclear weapon in Vietnam. General Frederick Smith, for example, thought that the United States can use nuclear weapon for defoliation in order to expose the supply lines in the Truong Son Mountains along the Laos-Vietnam border. Because the United States “cannot afford to try to match Asian manpower in conventional warfare on the ground,” it needed to rely on superior technology (Baldwin 1964).<sup>36</sup> In the jungles swarming with prolific Asians, superior weaponry was their only allies. If the United States lost the war, it was not to the Viet Cong, but to the forest and to Asian manpower and its incredible reproductive capability like that of a horde of vermin.<sup>37</sup>

Here is a startling resemblance of situation in Vietnam to Fanon’s description of Algerians under French occupation:

Hostile nature, obstinate and fundamentally rebellious, is in fact synonymous in the colonies with the bush, the mosquitoes, the native and disease, and colonization is a success when all this wild nature has been tamed (Fanon 2004 [1963]: 182).

And if the nature would not be tamed, all one can do is to eliminate it. In Vietnam, even the concept of genocide made little sense. The dehumanization of the colonials was total. In the absence of proper ‘human race’ to be eliminated, there was nothing but a wild nature to be tamed. There is no

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<sup>36</sup> Baldwin, Hanson. 1964. “Vietnamese Lifelines: Goldwater’s Advocacy of Interdicting Reds’ Supply Routes has Some Support.” New York Times May 26 1964

<sup>37</sup> In order to minimise loss of life (which means ‘American life’) the US needs to rely on superior technologies. One 20,000 tons nuclear weapon can clear a forest area of about 8,000 feet radius, comparable to 8000 sorties of F-100 dropping napalm.

genocide here; biocide or ecocide would be a more appropriate term.

But it is one thing to accuse the enemies of committing genocide in wartime (which existed on both sides) (Sartre 1968, Pike cited in Minami 1999); it is whole other issue to try to indict an army of a nation for committing genocide years after the war ended.

When Judge Weinstein of the district court rejected the plaintiffs' accusation of the defendants' complicity in genocide in *VAVA v. Dow et al*, at any rate, this attempt in the 1960s at expanding the notion of genocide made little impression to his judgement.

### ***Conclusion: Parable for Planet Polluto***

In 1969, the landscape of protest shifted radically when the evidence of teratogenic effects of 2,4,5-T on mice came to the open. People began to talk about 'Agent Orange,' which was discovered to be contaminated with *dioxins*, touted as "one of the most poisonous substances ever created" (The Times 2008), and its primary crime was remembered to be its terrible effects on human health. Before then, what was evil was the military use of the herbicides; it was the scale that mattered. Once malformation of fetus was noted, however, the chemical itself—and by proxy, the chemical manufacturers — became the object of criticism. Ecocide, on the other hand, became more of a domestic concern in industrial nations with their own poisoning of the environment.

When Galston used the word 'ecocide' in 1971, he was already thinking about 'auto-ecocide' happening at home.<sup>38</sup> The moral norm expressed in the word, 'ecocide', therefore, was borne

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<sup>38</sup> Some even hope that the adoption of ecocide law may allow them to indict climate-deniers for spreading false information (Jowit 2010).

across to the United States and to the rest of the industrialised societies in the form of new environmental movement in the 1970s.

Internationally, the Protocol I of Geneva Convention and Environment Modification Treaty were promulgated in 1977, prohibiting the means of warfare intended or expected to cause long term and severe damage to the environment.<sup>39</sup> These conventions were created in direct response to the American conduct during the Vietnam War in order to prevent future tragedies of Vietnam.

Since then, the term ecocide has been generalized to describe various forms of massive destruction of ecosystems which was taking place around the globe. Today the examples of ecocide is said to include the global destructions of rain forests, the nuclear disasters, oil spills and even global warming and ozone layer depletion (Gray 1996). As British environmental lawyer Polly Higgins told the *Guardian* in April 2010:

Ecocide is in essence the very antithesis of life. It leads to resource depletion, and where there is escalation of resource depletion, war comes chasing behind. Where such destruction arises out of the actions of mankind, ecocide can be regarded as a crime against peace (Jowit 2010).<sup>40</sup>

Higgins has been one of the driving forces behind the campaign to persuade the United Nations to accept 'ecocide' as an international crime on a par with genocide and other crimes against humanity. The crucial difference is that ecocide includes damages done to the nature, not exclusive to humans. If adopted, Higgins believes, the new ecocide law could be used to prosecute various environmental offenders, from the CEOs of the companies which has caused a massive

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<sup>39</sup> Including environmental modification technologies

<sup>40</sup> Such as the BP oil rig accident in Gulf of Mexico in April 2010

ecological destruction, to even the ‘climate deniers’ who distort scientific facts in order to thwart the effort to slow down the global warming. But the effort to assign human agency behind ecocide still seems to be mired with difficulties.

The genealogy of ‘ecocide’ can be traced back to the use of the word ‘biocide’ by Rachel Carson. In *Silent Spring*, Carson argued that the chemical substances like pesticides that were being released on the surface of the earth may be making the earth “unfit for all life.” Such substance, Carson argued, “should not be called ‘insecticide’, but ‘biocide’.” (Carson 1962: 8). Note how in Carson’s conception biocide was thought of as a *substance* like herbicide or pesticide that brings about ecological devastation. By the end of the 1960s, the term ‘biocide’ went through a metamorphosis. In 1968, Thomas Perry (1968) writes that the US military is “going beyond mere genocide to biocide.” Biocide here, is no longer conceived as a substance but as an act or an episode in the manner of how we say ‘homicide’ or ‘genocide.’ Just like homicide, genocide has no substance beyond the intention of those who perpetrated the crime. It is, therefore, an abstract *idea* embodied in the action of the agents. Herbicide, on the other hand, is a substance with a design and intention of the manufacturer or the inventor, but exists independent of the agency of the users. In a sense, herbicide itself embodies certain agency.

‘Biocide’ and its later form ‘ecocide’ seem to carry both these senses. Agent Orange commits ecocide, as much as it is an instrument of ecocide. One might speculate that the moral ambiguity surrounding the criminal nature of Agent Orange (spraying) came from this double origin. In the early 1960s, Rachel Carson waged an assault on DDT as a thing in itself, independent of the

farmers who used it. Because her focus was the chemical substance in itself, the targets of her criticism were the industry, which produced it, and the State, which had the responsibility to regulate it. The criticism of Agent Orange in post-war era also became centred upon the question about the nature of Agent Orange and the product liability of the industry.<sup>41</sup>

Ecocide was a 'wilful' act of destruction, but what was at question was the nature of that substance and the destruction it wrought. The nature of the offence of ecocide became inextricable from the question of *what* the specific chemicals are. In the concept of ecocide, the discourse of postcolonialism coincided with the growing concern about unintended consequences and risks produced by science and technology, in particular, risks produced by the disembodied, multinational mega-corporations. By the end of the 1960s, thousands of new chemicals were synthesised each year without proper testing. Like the merchandise streaming out of automated factories, these chemicals defied any attempt to locate the intention, which was entirely absent. Insidious but surely, these new poisons began to spread. Operating beneath the threshold of detection, their crimes could only be discerned through divinations of modern astrologists who brandished statistics and theories of risks. These modern experts in the detection of the insidious effects of poisons were epidemiologists. In their language, the new type of poison, which was essentially a statistical artefact, was called 'risk factor'. The moral and legal status of such risk factors, however, was still up in the air.

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<sup>41</sup> Galston and the others chose the word 'ecocide' instead of 'biocide' because it fitted better with newly emerging ecological discourse (Zierler 2008), but something of this original duality of biocide remained.

“See this? *Cây sim*. This means that this soil here is the worst,” said Professor Phan Tuu Boi, a retired ecologist from Agricultural University in Hanoi. We were at the site of the former US A So airbase with a journalist and a photographer from the *Chicago Tribune*, who were gathering data for an upcoming editorial on Agent Orange.

We were walking along the hedge of honey locust planted around the dioxin hotspot. A So airbase now lied within Dong Son Commune, located at the southwest corner of A Luoi valley. Already four decades had passed since the airbase was abandoned, but the relic of the war was still visible in the landscape. Vast expanse of empty land, short shrubs scattered over the exposed earth: in aerial photographs, one could still see the landscape dotted with craters created by bomb explosions.

*Cây sim*, or *melastoma*, grew preferentially in acidic soil of about pH 4 to pH 5, said Professor Boi. The locals all knew what this kind of soil was called in Vietnamese: *phèn chua*, or ‘alum soil’ in English. This was the reason why, they told me, they had to use a lot of fertilizer in order to grow rice in Dong Son commune.

It was not so much the direct consequence of the herbicide chemicals that the soil here was so poor, Professor Boi said, but because of the long years of exposure to rain and wind. It was a process called ‘laterization.’ And *this* was the result of the chemical defoliation and the construction of the airstrip. Sand gravels Americans brought in during the war to lay the runway for the airplanes, and the oil spillage and other chemicals that contaminated the former site of



refuel station also contributed to the poor recovery of vegetation here. But A So airbase was also where high level of dioxin contamination still remained in the soil. This was, at any rate, the conclusion the scientists from Hatfield consultant came to toward the end of the 1990s.

In 1964, a reporter for *The New York Times* described A Luoi thus:

The tall tree trunks are encrusted with lichens. Slimy vines hang from the branches. Rain forest and undergrowth blanket the mountain slopes to a depth of as much as 200 feet. Trails wide enough for one man to pass seem more like tunnels. Winding within yards of one another, they are invisible one from the next through the foliage. [...] Occasionally at the trailside are carefully placed posts with strange markings carved at eye level—direction indicators and other instructions for those who know how to read them (Grose 1964).

Since early in the 1960s, A Luoi valley was deemed a strategically important spot both by the Americans and the Communists, so it was one of the locations in which the fiercest battles were fought throughout the war. Time and again, American politicians like Senator Barry Goldwater and military general Frederic Smith Jr. had suggested the use of atomic bombs to clear the forest in this region (Grose 1964). But the political consequence of using a nuclear weapon was considered too great to justify the limited military advantage it might bring. Chemical defoliants, which had been in use for a few years by then, were somewhat less troublesome politically—“though it would take a year of continued spraying to get through to the ground in many places,” they surmised (ibid.).

And that, they did. The photographs of A So valley taken in the late 1960s reveal bare hills

entirely devoid of vegetation.<sup>1</sup> Four decades later, forests have returned in some parts of the valley, but it has not regained its previous exuberance. During the 1960s, the Pentagon had insisted that there would be no long term effects of the Ranch Hand program on the environment. But it appears they got their guesses wrong.

At the end of the 1990s, the scientists from Hatfield Consultant noted the effects of the herbicide warfare still visible in the hills around the valley: hills bare except for short grasses; landslides caused by the loss of vegetation which used to hold the soil in place. (Hatfield 2000). A cascade of cause and effect set off back in the wartime still continued to produce its effects decades later. In Dong Son commune where the US A So airbase was located, acacia trees people had planted under the state land reclamation initiative since the 1980s grew only to the height of about five meters. Bare grounds were visible everywhere, showing their cracked soil in dry season, flooding in time of monsoon. The rice paddies around the Trai Creek which ran through Dong Son commune still looked feeble in comparison to rice paddies in other regions of Vietnam in 2009.

When the war was over, Katu people, who had taken refuge deeper into the jungles either in Quang Nam province or on the Laos side of the border during the war, had returned and built their settlement here. But their life was never the same again.

### ***A So***

It was the time of Quynh Tam's grandparents that the people of A So clan first came to this land located at the southwest corner of A Luoi Valley. Quynh Tam figures he is about one hundred

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<sup>1</sup> Photographs stored at the A Luoi archive

years old, so this means that it was sometime in the nineteenth century.

Two brothers, A Vat and A Thoi led their people from the Katu Land in Quang Nam through what is now Laos. A Vat, who was the elder of the two, came first and built a settlement on the hillside south of the valley. There was plenty of land, and the game animals were bountiful. There were elephants, rhinoceros, dears, bears, and even tigers in the depth of the jungle that filled the valley. Seeing that there were abundant resources, A Vat sent a messenger to his brother A Thoi, and A Thoi also brought his people to this land. This was how the people of A So came to live in A Luoi. The children of A Vat became Ga Nhin and the children of A Thoi became Po Loong, and these two patrilineages lived together in A So village.

Quynh Tam, who is now the *gia lang*, or the Elder, of three communes, Huong Lam, A Dot and A Roang, is a Po Loong. His paternal grandfather is A Thoi. When Quynh Tam was born, A So people still lived on the hillside. People were afraid of the valley, he said. Trees grew tall. Wild animals like elephants, tigers and rhinoceros roamed the valley. It was so full of dangerous animals and so thick of vegetations that they built their long houses on the hillside and opened their swiddens around it. From there they ventured occasionally to the valley in order to hunt. The valley was a formidable jungle even to the people accustomed to the forest ways.

This region soon became known for bountiful game animals. There were even Lao hunters who would come searching for rhinoceros. They would come either alone or in a pair and lived with the people of A So for a month or two. They hunted exclusively for rhinoceros, and took only the horns and feces with them. They left meat for the locals to eat. Quynh Tam did not know what

they used horns and feces for. Perhaps they were used for medicine, he thought, but he was not sure. The Lao people had small nostrils and looked very strange to them, he said. They were temporary dwellers, and none of them stayed for a long time, nor took a woman of A So for a wife.

When he was ten years old, Quynh Tam rode an elephant to the Katu Land in the South and brought back his wife. By the time the Japanese and the French brought war to this region, he was already an elder of his clan. His father, who was also an elder, had died young, and as the eldest son of the family, he took on his responsibility to lead his people. He remembers fighting alongside the Japanese, carrying ammunition and supplies for them. He knew that Japanese did horrible things on the coast during the war. But here in the mountains, they were on amicable terms with the locals.

By then, people of A So clan had relocated their long houses further down the valley, closer to the location where Americans would eventually build their military base in the late 50s. They typically built four long houses surrounding a courtyard in the middle where they held ceremonial rituals. Unlike the Katus in Quang Nam, A So people did not build a communal house at the centre. Each long house had 20 to 30 households living together. But it was only on rare occasions that every member of the clan gathered at the village at one time—usually after each harvest and before the next planting. The villagers spent much of their time in their swiddens in the hills. They planted hill rice in the spring, so the grains can be dried after harvest. During the wet season in the fall, they planted cassava and corn. This way, soil would be damp and soft when they harvested the tubules, which could be pulled out of earth by hands.

As the farmland around the settlement became exhausted, they built their swiddens further and further away from their village, sometimes even days away by foot. At the site of their swiddens, they built *nhà troi*, or a shack, and spent much of their time there. Unlike some of their neighbours to the north, A So people did not move their long houses very often. Even during the First Indochina War, when the French air-raid set four houses on fire and killed fifty cattle in A So, they did not relocate their village itself. *Nhà Troi* scattered in the hills provided the first place of refuge whenever they were invaded by hostile forces. So when they sensed the danger of French attack, they swiftly fled to their *nhà troi*, but they returned to their village after the French was gone. They never abandoned their village altogether during the war with the French.

It was a different story during the war with Americans. In the late 1950s when the Americans and the ‘Puppets’ (or *nguy* as they called the Saigon army) began to build a base in A So, the villagers were conscripted for its construction. They were merciless, and their tyranny escalated as the time went by. They took their cattle without remuneration. They used violence to force the villagers into submission. And when seven villagers were killed in 1959, Quynh Tam realised that if they hesitated any longer, the American control would become so tight, they would not be able to move around or have contact with other villages.

Immediately, Quynh Tam contacted the elders of the Katu people in A Roang to the south. And after securing their agreement, in 1960, the villagers of A So ran from their home to find refuge. That was the beginning of their decade-long exile from their home. They first went to A Roang, and when it also became dangerous, they moved further south to Huong Huu in Nam Dong,

and then crossed the border to Laos where Taoi people lived. The villagers of A So did not come back to their homeland until 1973.

### ***Kon Nam***

When the people of A So village returned to A Luoi after the war, at first they built their village closer to the site of their former village, where the Americans built their airbase. Slowly they moved eastward, closer to Ho Chi Minh road the Cubans built. The ruin of American A So airbase was visibly poisonous. Dangers lied everywhere. Unexploded bombs scattered all around. But at first they chose to live there nonetheless. This was because the present location of the A So village (further to the east of the original one) was known as a 'land of poison' before the war. It was a land of taboo people were afraid of entering.

Beyond the hills just behind the village to the south of Ho Chi Minh road was the hill of Kon Nam.<sup>2</sup> It was one of three mountains in this region inhabited by gods. The others were A Lu in Quang Nam near the old Huong Huu, and Ko Ui in Hong Bac to the north. Kon Nam and A Lu were evil spirits, said the locals. Ko Ui, on the other hand, was a good spirit. One time Kon Nam and A Lu allied together and attacked Ko Ui, raining lightening bolts on it. Ko Ui was eventually defeated. This was when Mount Ko Ui was split into two and the landslide it created buried the village of A Deng.

Kon Nam was a powerful spirit. During the war with Americans, bombs fell everywhere. But no bomb fell on that hill, said Quynh Tam. All the hills around it were defoliated. But no chemicals

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<sup>2</sup> Kon Nam seemed to be both the name of the spirit and the name of the hill in which it lived.

were sprayed there. All other forests were set ablaze. But not the hills where Kon Nam lived. There were many large trees there. There were tamarind trees, bamboo rats, honey.... The game animals were also plentiful. But the local Katus were forbidden to enter the forest surrounding it. If they broke this taboo, they could lose their mind, fall ill, or sometimes even die. If anyone wanted to enter the forest, they needed to ask for permission from the spirit first. They were to give an offering of a goat, a chicken or a bull, and sleep there. If the dream forebode well, one may enter and cut the trees or hunt there. Otherwise they simply returned home. This was a tradition people still followed even now, said Quynh Tam.

Only recently, there was a man who entered the forest to cut trees to build his house. Quynh Tam warned him of the possible consequences, and advised him to sacrifice a chicken. But the young man did not heed his advice. A few days later, the house the young man was building across the street from his old house mysteriously burnt down. Quynh Tam was sure it was the scourge of Kon Nam.

There was a contradictory piece of information on the state of Kon Nam in the time of war. Quynh Tam claimed that no bombs landed there. Americans could not spray chemical herbicides there either. Quynh Dat (the younger leader of A So) on the other hand, swore that it was sprayed with chemicals and bombs *did* fall on it. It was just that Quynh Tam was too old to actually go close enough to see it for himself. Even the place they now lived used to be called the 'land of poison', as in 'land of taboo'. It was only after the forests were destroyed by the war that the locals allowed themselves to move into this region to build their settlement.

This story reminded me of the story about “The Nation’s Most Ironic Nature Park”, in William Cronon *Uncommon Ground* (1996). It was a story about the Rocky Mountain Arsenal in Denver, which was a storage site of a gamut of toxic chemicals produced by the military. It was known as one of the worst toxic waste dump in the country. Ironically, the reputation and the danger of the toxic chemicals kept humans at bay, which allowed the wildlife to gather, making it one of the most remarkable wildlife refuges in the United States.

Similar thing happened when the federal government bought Times Beach, Missouri in 1983, and bulldozed the town after they discovered high level of dioxin contamination. This buyout, according to Michael Gough, “led to the only biological effect ever identified at Times Beach: populations of wild turkey and deer have exploded in the fenced area of the former town” (Gough 1996).

In A So, the difference was that it was the spirits the toxic chemicals drove off, and the humans who moved in afterward in its stead. Agent Orange had tamed not only the nature, but also the spirits.

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In the early years of herbicide program, some officials in the US military claimed that the defoliation of jungles using chemicals would “improve country’s economy by permitting freer communication.”<sup>3</sup> Whatever the true intention of such a comment was, in hindsight, the defoliation in A Luoi valley did open up the region for new economic life in the post war era. No

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<sup>3</sup> New York Times. ‘defoliation effort delayed in Vietnam’ Jan 12, 1962.



longer were there impenetrable jungles. Elephants, tigers and rhinoceros have also wandered off, if not killed. In their place, now there were rice paddies, paved roads, hydroelectric dams and power lines. From the district centre of A Luoi to Huong Phong to the south and Hong Van to the north, the flatland of the Asap river basin was covered in green rice paddies. Even in a slightly hillier Huong Lam and Dong Son, peasants now engaged in wet rice cultivation, and the crops from swiddens in the hills are now largely supplementary. Hill rice was still tastier than paddy rice, they said, but paddy rice cultivation saved them a lot of time and energy, because they did not have to go to the swidden all the time. Their habitation also moved from hillside to the plain under the government sponsored sedentarization policy.

In this time of change, for the ethnic minorities of A Luoi valley, Agent Orange was not the only disturbance in otherwise placid life. During the almost fifteen years of war, their life had changed drastically. The War was the greatest confounder to the toxic explanation of their present suffering.

## CHAPTER 5: IS AGENT ORANGE A POISON?:

### AGENT ORANGE LITIGATIONS

#### *A Brief History of Agent Orange litigations*

“A noteworthy feature of the Agent Orange furor is that it did not exist until about 1 1/2 years ago,” Constance Holden (1979) wrote in 1979. In 1977, Maude deVictor, a benefits counsellor in the Chicago regional office of the Veterans Administration, received a call from one of the veterans’ wife who suspected that her husband’s terminal cancer was a result of Agent Orange exposure during the war. At the time, the Veterans’ Administration had no special provision for veterans thought to be affected by Agent Orange (Institute of Medicine 1994). After hearing about the death of this veteran, deVictor began to gather information on the health of Vietnam Veterans and its possible link to the herbicide exposure. The following year, Bill Kurtis, a local television reporter produced a documentary film on deVictor’s work, *Agent Orange: A Deathly Fog*, which was aired on CBS network that year (ibid.). In 1978, Paul Reutershan, a former helicopter crew, appeared on ‘Today’ show with the story of how he was poisoned by Agent Orange in Vietnam, shocking the viewers with his aphorism, “I died in Vietnam, but I didn’t even know it.” The issue soon became a national scandal, raising the notoriety of Agent Orange and eliciting a wide-spread sympathy for the veterans.

It was also toward the second half of the 1970’s that the toxic effects of TCDD dioxins (the contaminant of 2,4,5-T) became internationally publicised through toxic disasters at Seveso, Italy, Love Canal, New York and Times Beach, Missouri and other reports on the health consequences of

2,4,5-T worldwide (Hardell 2004). In particular, by the late 1970s, the famous (or infamous, depending on one's position) 'Hardell study' from Sweden gave a positive indication of human carcinogenicity of 2,4,5-T (Novey 1988).

In the early 1970s, it was suspected that what caused birth deformity in mice exposed to 2,4,5-T was its TCDD dioxins contaminant (Courtney et al 1971, NAS 1974). Throughout the 1970s, scientists had come to a better understanding of various pathogenic processes associated with TCDD exposures, such as carcinogenic and teratogenic nature of dioxin (Van Miller et al 1977, Kociba et al 1978), and the mechanisms through which dioxin caused these toxic effects in animal cells (Poland and Glover 1972).

Meanwhile, in 1978, the litigation began to take shape against the manufacturers of the chemicals. Paul Reutershan was the first to spearhead this litigation. Having heard the news about deVictor's study, Reutershan became convinced that the cancers that spread to his colon, liver and abdomen were caused by Agent Orange. He contacted a personal injury lawyer, Edward Gorman, and filed lawsuit against Dow, Monsanto and Diamond Shamrock, who were the main suppliers of chemical herbicides to the US military during the war (Shuck 1987).<sup>1</sup> Over the next four years, the lawsuits grew in scale, involving over 600 lawsuits and 15,000 putative litigants (Novey 1988). These cases were consolidated into one class action lawsuit in 1983 under Judge Jack Weinstein in the Federal District Court in Brooklyn.

The veterans' Agent Orange litigation (now turned into a 'mass toxic tort litigation') enjoyed

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<sup>1</sup> Reutershan died in December that year.

an enormous public visibility, and in 1984, they reached a 180 million dollar settlement with the chemical manufacturers.<sup>2</sup> With the high interest rates at the time, this amount increased to about 330 million dollars by the time it was distributed to 291,000 veterans who filed their claim before the cut-off date in 1994 (Weinstein 2009).<sup>3</sup> Despite this partial success of the veterans, the central question about whether Agent Orange actually caused the veterans' illnesses remained unsettled. In fact, in 1984, the issue appeared ever murkier.

Judge Weinstein's appraisal of the settlement was revealing of this ambiguity. While supporting the settlement, he noted that several epidemiological studies published in 1984 had failed to demonstrate a causal relationship between Agent Orange and its alleged health effects on the veterans (Novey 1988). Meanwhile, in 1985, the Evatt Commission of Australia issued a report concluding that there is no causal relationship between Agent Orange and the illnesses suffered by the Australian veterans of the Vietnam War (Hall 1989).<sup>4</sup>

Following the settlement of the class action suit in 1984, the veterans who opted out of the class action began to bring their individual suits to the court. During this second phase of the veterans' Agent Orange litigation, Judge Weinstein dismissed all cases on the ground that the plaintiffs' claims were covered by the class action, and that the plaintiffs had failed to submit

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<sup>2</sup> Many veterans felt betrayed by this settlement. The amount of money may seem quite large, but because of the large number of litigants, each veteran received only a small amount of compensation.

<sup>3</sup> See also : *Stephensons v. Dow et al* (In re "Agent Orange" Prod. Liability Litig. 05-1760-cv) 2007 Second Circuit Court (brief for plaintiff appellee)

<sup>4</sup> Hall argues that misrepresentation of scientific research in media reports resulted in popular misconception, but the accusations of misrepresentations are the issue for both sides. Hardell (2004), for instance, argues that their results were misrepresented in the Evatt commission report, who adopted Monsanto's report on Hardell almost verbatim without citing Monsanto. This report was in turn, taken by Alvin Young and G. M. Reggiani (of Hoffman La Roche) without regard to Hardell's complaints.)

‘acceptable evidence of causation’ (Novey 1988). None of the plaintiffs in these opt-out cases could prove that their *particular* ailment was caused by Agent Orange. Nor could any of them prove which defendant had manufactured the chemicals that allegedly caused his or her injury. Class action, Weinstein (2009) argued, was the proper forum for settling disputes like this because of the difficulty of determining *specific causation* (although he was also suspicious about the *general causation* for Agent Orange and its alleged health effects).

Weinstein’s opinion regarding this inadequacy of scientific evidence of causation had not changed in 2005. In his judgement dismissing the plaintiffs’ claim in *VAVA v. Dow*, Weinstein (2005) still maintained that scientific evidence on the link between various diseases and Agent Orange exposure in Vietnam was insufficient. However, for reasons I will outline below, this question of causation never became the main point of contention in neither the veterans’ Agent Orange litigations nor the Vietnamese Agent Orange litigation that took place in the 2000s.

In 1998, the third wave of veterans’ Agent Orange litigations began when the plaintiffs whose illnesses manifested after the cut-off date of 1994 brought their suit to the court. These cases are often referred to as *Isaacsons and Stephensons* litigation. Unlike in the previous opt-out cases, Court of Appeal decided to let this case proceed, arguing that there was a sufficient conflict of interests between the plaintiffs and the representatives of the veterans’ class action, who terminated the distribution of the settlement fund without any provision for claimants that appeared post-1994 cut-off date for the distribution of compensation. The case was thus brought back to Judge Weinstein of the Federal district court of New York.

This was the context in which the Vietnamese litigants brought their case before Judge Weinstein. On January 30, 2004, the Vietnamese Agent Orange victims represented by the VAVA filed their lawsuit to the Federal district court of New York. Barely ten days later, on February 9, 2004, Judge Weinstein gave his verdict on the Stephenson and Isaacson's litigation, awarding the defendants a summary judgement dismissing the plaintiffs' claim on the ground that 'government contractor defence' applied.

Throughout both the veterans' and the Vietnamese litigations, what was conspicuously absent was the discovery on causation. Ordinarily, causation linking the plaintiffs' injuries to the specific substance is the heart of toxic tort litigations (Jasanoff 1997). However, in these Agent Orange cases, no discovery on the scientific evidence linking the plaintiffs' injuries to Agent Orange exposure was made in court. This was because in both Vietnamese and Veterans' cases, the plaintiffs' claims were barred from proceeding before they reached this stage. In the Vietnamese case, the bone of contention came down to the applicability of international law that prohibited the use of poison in war. In both veterans and Vietnamese cases, 'government contractor defence' presented itself as the major obstacle to the plaintiffs' claim.

### ***Government Contractor Defence and International Law***

The government contractor defence is one element of sovereign 'discretionary-function' exception to Federal Tort Claims Act (Rakowsky 2005).<sup>5</sup> It gave certain protection to government

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<sup>5</sup> Federal Tort Claims Act was promulgated in 1945, surrendering certain aspects of sovereign immunity from litigation involving tort. One of the exceptions to FTCA was 'discretionary function exception', which protected the federal employees from tort claims based on "performance or the failure to exercise or perform discretionary function"

and military contractors like Dow and Monsanto by extending sovereign immunity under domestic tort law. Although in theory, government contractor defence existed since the 1940s, its theory had not developed its present form until the Supreme Court decision in *Boyle v United Technology Corporation* in 1988 (Rakowsky 2005). Reminiscing in 2009, Judge Weinstein (2009) wrote that the veterans' original class action suit in 1984 would have been barred by government contractor defence if this legal argument were available then. But because the strength of this argument was still untested until 1988, in the class action suit in 1984, the manufacturers of Agent Orange decided to settle out of court. The situation was entirely different after 1988.

In *Boyle*, Justice Scalia of the Supreme Court set forth a test for government contractor defence. In order for the government contractors to claim immunity from liability, they need to show that:

- 1) the United States approved reasonably precise specifications;
- 2) the equipment conformed to those specifications; and
- 3) the suppliers warned the United States about the dangers in the use of equipment that were known to the supplier but not to the United States (Rakowsky 2005: 14).

As long as they satisfied these conditions, Dow Chemical, Monsanto and other manufacturers of Agent Orange were legally protected from tort claims.

One exception to government contractor defence was in case of violation of international laws such as war crimes and crimes against humanity. In Nuremberg trial, the manufacturers of chemical gas Zyklon B were found guilty of conspiring with the Nazi 'Final Solution' for providing the chemicals that were used in gas chambers. Just as the manufacturers of Agent

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of the government. (Cohen 2007). It appears that this exception is based on the doctrine of separation of power.

Orange argued that Agent Orange was an ordinary herbicide, the defendants of Zyklon B case argued that the chemicals used were ordinary pesticide. But the judges at Nuremberg ruled that since the amount procured was far greater than what would have been needed for extermination of vermin, the defendants should have known to what end the chemicals were going to be used, and thus found to be guilty of aiding and abetting with the Nazi's crime against humanity (Weinstein 2005). Likewise, if the use of Agent Orange was a violation of international humanitarian law, and if the manufacturers are found to be in possession of the knowledge that their chemicals would be used in illicit activity under international law at the time of procurement, they would be found guilty of conspiring with the US military.

While the Vietnamese plaintiffs' counsel names the veterans' cases as "companion cases", their case operate under a different logic. Veteran's case was genuinely a product liability suit. Because government contractor defence protected the manufacturers, their case was hinged upon the argument that the manufacturers concealed the information about the toxicity of the chemicals from the government.<sup>6</sup> Implicit in this argument was that had the government possessed all these information manufacturers had, it would not have used these chemicals. Thus the veteran plaintiffs' primary strategy was to remove the US government from the alleged offence.<sup>7</sup> The

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<sup>6</sup> In a letter from the plaintiff lawyer of Stephenson and Isaacson case, Gerson Smoger (<http://www.agentorangelaw.net/PDF/AO%20veterans%20LTR.pdf> accessed March 29, 2011)

<sup>7</sup> When Vietnamese plaintiffs' lawyers were invited to submit an affidavit to the Veterans' case regarding government contractor defence, they suggested the veterans' attorneys that government contractor defence does not apply to the cases of violation of international law. Not surprisingly, the veterans' lawyers did not choose to take up this argument. (Otherwise this would have meant that their own military committed a war crime.) For the Vietnamese plaintiffs, on the other hand, it would make very little sense to acquit the US military.

Perhaps, to acquit the US government from its responsibility in this way may not conflict with the desires of some of the veterans. However, this is an entirely different story for the Vietnamese plaintiffs. Firstly, the argument that the government and the military did not know about the poison potentially conflicts with the plaintiffs'



position of the Vietnamese plaintiffs was slightly more complicated. It involved domestic product liability as in the veterans' case, but it also involved international law claim. This two pronged argument would eventually become difficult to hold simultaneously.

### ***Intention and Knowledge***

Since the dismissal of *VAVA v. Dow et al* in district court in 2005, the Vietnamese Plaintiffs' attorneys became boxed into making an increasingly technical and circuitous argument concerning international laws and the intentionality of the manufacturers. In the *writ certiorari* to the Supreme Court, the plaintiffs' attorneys argued thus:

[P]etitioners herein have not complained about 'unintended' toxic side effect from a defoliant. It is petitioners claim that these respondents knew that a very potent poison, which did not have to be present, was in the agents provided to the government and that they would be sprayed over vast populated areas. From this knowledge, a court can easily *infer an intent* to poison."<sup>8</sup>

Does this make sense at all? The argument made by Judge Weinstein of the district court—that Agent Orange was a herbicide and not a poison, thus its use in Vietnam did not violate international law of warfare—may have sounded sophistic, but one thing clear and consistent about Weinstein's reasoning was that he based his decision regarding the criminality of an act on the *intention* of the actors. As far as Weinstein was concerned, exposing the plaintiffs to a chemical

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international law claim (although the lawyers claim that one can impute guilt of the Manufacturers on the basis of their knowledge about poison alone without convicting the US government, this argument seems sophistic). It seems unconvincing to argue that the military which actually used the chemicals are not guilty of poisoning the Vietnamese, while the manufacturers who had the knowledge of its *risk* are guilty of poisoning under international law of war crime. Secondly, one should seriously consider what the Vietnamese plaintiffs would have thought about this, if they heard that their lawyers were acquitting the US military on their behalf.

<sup>8</sup> Petition for writ of certiorari *VAVA vs. Dow* 2008. p12-13)

substance which may have *unwittingly* posed health risks to them was the result of negligence or recklessness; it was not the same as intentional poisoning.

This distinction was crucial for international law aspect of this litigation. Unlike the veterans' Agent Orange litigation, strictly speaking, the Vietnamese Agent Orange litigation was not a product liability suit (although the Vietnamese plaintiffs claim that they did not abandon domestic tort law claims altogether, either); the main thrust of the plaintiffs' argument was that the defendants violated international humanitarian laws (Sebok 2005). In this case, negligence or recklessness was not sufficient to qualify as the violation of international laws prohibiting the use of poison weapon.<sup>9</sup> Plaintiffs' attorneys then went on to argue that one can *infer the manufacturer's intent to poison through the knowledge* they had.

Here one must suspect that when lawyers say 'intent', it means something different from ordinary use of the term. *Mens rea*, or guilty conscience, for the lawyers lies on a continuum from intent, knowledge, and recklessness to negligence (Khanna, V.S. 1999). A desired consequence with full awareness of the situation is intended. Knowledge entails awareness of practical certainty that a certain consequence will follow an act. Recklessness is a conscious disregarding of a substantial and unjustifiable risk. And negligence is a failure to exercise due care. While *mens rea* normally refers to the subjective state of mind rather than objective condition, in the absence of confession by the defendants, one must infer subjective state of mind from objective situation. On the one extreme of the continuum, when the expected outcome is thought to be inevitable, it is

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<sup>9</sup> Boyle v United Technologies Corp., 487 US 511 (1988) cited in Rakowsky (2005: 14)

inferred to be desired and thus *intended*.

For instance, recall the discussion on Sartre's (1968) argument regarding American genocide in Vietnam (chapter 4). In Sartre's rendition, genocide in Vietnam was an inevitable consequence of history and structure that led to that war (see Chapter 4). Any 'reasonable' person in the same situation would have chosen (and even come to desire) the genocidal acts, as an American soldier returning from Vietnam often attested. Genocide in Vietnam, according to Sartre, was intentional on the extreme end of the scale of intentionality test.

The district court had determined that the use of herbicides in warfare did not violate any international laws that were in force at the time of Vietnam War.<sup>10</sup> Agent Orange may have caused serious health hazard. Yet ostensibly, the purpose of its use by the US military was to defoliate the forest and destroy enemy crops. Insofar as the military was concerned, therefore, the health effects were unintended collateral effects, and if the issue is about the unintended side effects of herbicides, it does not fall under the purview of Alien Tort Statute.<sup>11</sup>

The plaintiff attorneys argued that the use of herbicide in war was not prohibited by customary international laws of warfare *only if* the herbicides "do not produce poisonous effects upon enemy personnel."<sup>12</sup> Since the defendants *knew* that the herbicides they procured contained poisonous substance (i.e. dioxin), and since they knew how these chemicals were being used, one

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<sup>10</sup> The Hague Convention of 1907 was not specific enough about 'poisoned weapon' included, and the Geneva Protocol of 1925 was concerned mostly about the kind of chemical gas weapons used in the First World War (Weinstein 2005).

<sup>11</sup> The plaintiff lawyers, therefore, largely skirted around the question about the US military altogether and claimed that it was the knowledge the defendant-manufacturers had that made them guilty of war crime. ("Plaintiffs nowhere allege that the government intended to harm human beings through its use of Agent Orange" (Appeal Decision 27))

<sup>12</sup> "either from direct contact, or indirectly from ingestion of plants and vegetables which have been exposed thereto." Cramer Opinion in *VAVA v Dow* Petition for Writ Certiorari to Supreme Court p.11)

can infer the intent to poison.<sup>13</sup> Even if the toxic effects of Agent Orange suffered by the plaintiffs were ‘unintended consequence’ of spraying herbicides designed to defoliate forests for the military, “at least insofar as the chemical company respondents are concerned”, it was *not* an unintended consequence.<sup>14</sup> Thus the question in *VAVA v Dow* was whether one could infer the defendants’ intention to poison the people of Vietnam from the knowledge they held at the time of procurement in the 1960s. The question on inferring *intent* thus became entangled with the question of *what kind of poison* Agent Orange was, and *what* the military and the chemical companies *knew* about it.

In both the Vietnamese and the veterans’ litigations, therefore, ultimately the issue came down to the question of knowledge *not* of the *etiology* of the diseases and conditions plaintiffs complained of, but of the *toxicity* of the substance known in the 1960s.<sup>15</sup> In particular, it was a binary question about whether Agent Orange was a poison or not, and whether it was a poison

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<sup>13</sup> The defendants were two degrees separated from the actual scene of the crime. They had no means of peaking into the mind of those who ordered the use of the chemicals, and those who were actually employing the chemicals in Vietnam. The only means of assessing the intention of the actors was through the patterns of usage. The chemical companies like Dow and Monsanto were supposed to be stand-ins for the US government and the military, who had immunity from being sued in US court. But somehow the guilt of the US government tended to get left out in the tirades against Agent Orange. There were also conflicting claims and desires regarding the knowledge the US military had about the toxic nature of the herbicides between the veterans and Vietnamese plaintiffs.

<sup>14</sup> In the *Writ of Certiorari* to the Supreme Court of the United States, Vietnamese plaintiffs’ lawyers claimed:

This case is not and has never been about whether the manufacture, supply and use of herbicides per se to defoliate large areas of Viet Nam violated customary international law. Rather, it is about whether the use of herbicides which respondents *knew* contained excessive and avoidable amounts of poison (dioxin), and which added nothing to the defoliation process, violated customary international law.

(*VAVA v Dow* 2008 Petition for writ certiorari (my ital). The Supreme Court of the United States. P.6. Somehow in the course of their argument, plaintiffs acquit the federal government of their responsibility, somewhat, by claiming that the manufacturers knew about this toxic contamination, which was not ordered by the military. (plaintiffs 2006)

<sup>15</sup> Etiology is defined as:

1. The science and study of the causes or origins of disease.
2. The cause or origin of a disease or disorder as determined by medical diagnosis.

Toxicity is defined as:

1. The quality or condition of being toxic.
2. The degree to which a substance is toxic

(<http://medical-dictionary.thefreedictionary.com/etiology>, accessed July 5, 2011)

weapon or just a defective herbicide. Thus, the bone of contention was the *knowledge about the toxic nature of the chemical herbicides that the manufacturers had in the 1960s* when they were supplying the military with the herbicides.

### ***Early Evidence of Toxicity***

Now, the signs of toxicity of the chemical components of Agent Orange were available to the chemical manufacturers ever since the 1940s. Some of the earliest evidence of toxicity of 2,4,5-T came from clinical cases of workers exposed to the chemical in industrial accidents. In 1949, for example, workers at Monsanto Company were exposed to the chemicals in an accident involving runaway reaction at the 2,4,5-trichlorophenol (precursor of 2,4,5-T) plant (Hay 1982: 98). The workers initially complained of burning sensation in eyes, nose and throat. The subsequent symptoms included nausea, vertigo, headache, vomiting, disturbed sleep, nervousness, loss of libido, impotence, high cholesterol, raised blood fat level, unexplainable pain and extreme fatigue, *plus* pustules and pigmentation of the skin (Ibid) (compare this to diseases now associated with Agent Orange in Appendix 1). This latter skin condition was called ‘chloracne’.

Chloracne was no ordinary acne. A doctor at Diamond Alkali plant, where they had an outbreak of chloracne among workers in 1954, described it as a serious condition, and that “it is impossible to believe how disfiguring this disease is and what a social disability it is.”<sup>16</sup> People with chloracne emitted a strange odour, distinct from both sweat and rancid fat. Physicians

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<sup>16</sup> Cited in VAVA v Dow. MDL No. 381, 05-1953-cv (United States Court of Appeals Sept 30, 2005) (Brief for Plaintiffs Appellants), p28

Raymond Suskind and William Ash, who examined the workers exposed to chemicals in the accident at Monsanto, believed that these men were excreting chemical substance through their skin.<sup>17</sup>

In 1956, an assistant to chemistry professor Sanderman at the University of Frankfurt synthesised a small amount of tetrachlorodibenzodioxin (TCDD) in order to test its characteristics as wood preservative (Hay 1982). They terminated this experiment almost immediately, when one of the assistants, who were exposed to a puff of the powder when he opened the jar containing the substance, developed a mysterious skin lesion. They consulted Dr. Karl Schultz, who had been examining a worker from Boehringer Company.

After the worker from Boehringer was brought to his attention, Schultz contacted a chemist to acquire a sample of 2,4,5-trichlorophenol from Boehringer, and applied it to the ear of a rabbit. He found that while there were no effects when pure sample of 2,4,5-trichlorophenol was applied, when Boehringer sample was applied, it caused inflammation and reddening of the skin. This was a clear indication that it was some impurity in Boehringer sample that caused chloracne.

It was around this time that Sanderman's assistant was brought to Schultz' attention. Schultz immediately recognized what Sanderman's assistant's ailment was (Butler 2005). He put these two facts together and postulated that the toxic contaminant of 2,4,5-T was in fact TCDD dioxin. In

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<sup>17</sup> The first indication of the possible hazard of TCDD contamination can be traced back to 1939, when hexachlorophene produced by the laboratory of Givaudan (scent-manufacturer) in New Jersey showed high toxicity in animal experiments (Hardell 2004; Dow internal memo 1957 also mentions that Dow had a knowledge of this from Givaudan, and had relayed this information to Boehringer in 1955) . Like 2,4,5-T, hexachlorophene was produced from trichlorophenol, and the result of its toxicity may have alerted the scientists about the toxicity of 2,4,5-T. The result of the experiment, however, was never published.

order to test this theory further, Schultz applied a small sample of TCDD on his arm, and lone-be-hold, he developed chloracne a few weeks later (Allen 2004). Convinced that he has discovered that the real chloracnegen (or the culprit of chloracne) was a contaminant of 2,4,5-T, TCDD, Schultz published his result in a German scientific journal. And George Sorge, a chemist from Boehringer Company, who collaborated with Schultz in his research, developed a method to reduce dioxin impurity in 2,4,5-T (Kimmig and Schultz 1957).

Boehringer Company, which had been exchanging information on the problem of chloracne with Dow Chemical in the United States for some time, shared this information with Dow in 1957.<sup>18</sup> Thus by 1965, when the manufacturers of the chemical herbicides gathered in Midland, Michigan to discuss the problem of chloracne and dioxin contamination of 2,4,5-T, Dow Chemical had known about this problem for some time. They also knew from Boehringer Company how this contamination can be reduced. However, it appears that Dow had not taken much action about it until 1965.<sup>19</sup>

In an internal memo dated June 23rd, 1965, Dr. V. K. Rowe of Dow Chemical Company urged its management to deal with their dioxin problem, which was causing a small epidemic of

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<sup>18</sup>Prior to 1955, Dow Chemical had acquired the knowledge from Givaudan Laboratory, who noted skin irritation in workers exposed to 2,4,5-trichlorophenol, which was the precursor of 2,4,5-T. Dow had communicated what they found out with Boehringer, and Boehringer returned favour in 1957 when they found out about TCDD. (Dow Chemical, internal memo, Feb 22, 1957. Dow 1716970. ([http://www.bluewaternavy.org/WhoKnew/Dow%20LTR%20Chloracne%2022\\_57%20125\\_4.pdf](http://www.bluewaternavy.org/WhoKnew/Dow%20LTR%20Chloracne%2022_57%20125_4.pdf) accessed March 31, 2011))

<sup>19</sup> “Dow has informed other manufacturers of this danger and methods to detect it. We have not shared our know-how regarding elimination of the hazard, but would be willing to consider conditions under which this know-how could be made available. Some of this knowledge is covered by an agreement with a European corporation which presently limits our ability to transmit this information to others.” A2389-31-A2389-33. (Dow internal memo in Stephenson reply brief p 84. 05-1760-cv). Even after 1965, each manufacturer seem to have had different approach to reducing dioxin contamination. While Boehringer/Dow method tried to reduce the contamination by reducing the temperature of ( process), Nitro used filters.

chloracne (60 to 70 cases) among their workers.<sup>20</sup> Rowe complained of a delay due to the changes in analytical method used to ascertain their suspicion, but the matter could wait no longer. They had come to suspect that the impurities in their 2,4,5-T contained a significant amount of TCDD dioxins, which Rowe asserted, has a “tremendous potential for producing chloracne and systemic injuries”.<sup>21</sup> If this news leaked out to the public, the entire chlorine industry could face a regulatory action. 2,4,5-T was not only sold to the military for their use in Vietnam; it was also used widely in agriculture and forestry in the United States. “Let us practice good citizenship,” Rowe argued. If the entire 2,4,5-T industry co-operated in “cleaning up their own house from within”, there was no reason why they could not have this problem under control without involving the government.

Within the same year, Dow scientists convened a meeting of the chemical manufacturers that produced 2,4,5-T, and notified the other companies like Monsanto, Nitro, and Diamond Alkali about the problem of dioxin contamination. Dow offered to share the new technology they had acquired from Boehringer Company, which would also allow the other companies to reduce their product’s impurity. The contamination of about 1 parts per million (ppm) of TCDD would probably not present “appreciable hazard to consumers”, they surmised.

But this was the time of war. Any excess amount of 2,4,5-T that the chemical companies could manufacture, the military would soak up like a sponge.<sup>22</sup> Dow’s warning thus went relatively unheeded by other companies, resulting in a great variability among the contamination

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<sup>20</sup> Dow memo (DOW 747096) June 24, 1965. (circulated on AOWG listserv), Dow1-120896 Report on the Chloracne Problem Meeting 24/3/1965, dated March 29, 1965 (on bluenavy.org accessed March 2011)

<sup>21</sup> *ibid.*

<sup>22</sup> In fact toward the end of the 1960s, the production of 2,4,5-T could not keep up with the demand for the war that the military had to use Agent White, which contained picloram instead of 2,4,5-T.



level of their products. Dow prided itself for keeping the impurity below 1 ppm, but dioxin level of Monsanto samples, for example, sometimes exceeded 50 ppm.

In the 1980s, the attorneys of the Vietnam Veterans seeking compensation from these companies would attempt to use this difference in attitude toward dioxin contamination to wedge a schism among the chemical companies (Schuck 1986). But they eventually failed. The industry held fast together. By the 1980s, the chemical industry was convinced that they were in this 'war on chlorine' together till the end. But in 1965, this epic war to protect chlorine industry was only beginning. The following year, the Bionetics Research Laboratory produced an undisclosed result demonstrating teratogenic nature (i.e. causing fetal anomaly) of 2,4,5-T in laboratory mice. As the Vietnam War became increasingly unpopular toward the end of the 1960s, Agent Orange became the symbol of American barbarism in Vietnam. People took to the street accusing the military of conducting 'chemical warfare'. Suddenly, posthumous to Rachel Carson's untimely death in 1965, the crusade against chlorinated hydrocarbons like DDT and 2,4,5-T found its ally in the anti-Vietnam War movement.

### ***Corporate Cover-ups?***

The historical records from this period on the chemical industry's knowledge of the toxicity of herbicide chemicals 2,4-D and 2,4,5-T is rife with evidence of possible cover-ups and manipulation of information. For example, record shows that two physicians from Monsanto, Dr. Suskind and Dr. Ash, knew that the workers, who were exposed to 2,4,5-T, also complained about symptoms other than chloracne, but in their report, they mentioned that the illnesses suffered by

the workers were limited to the skin (Allen 2004).<sup>23</sup> Dow Chemical knew about dioxin contamination of 2,4,5-T and the risk of chloracne, but continued to produce it for domestic and military use.

Chloracne was not the only problem the manufacturers knew to be associated with the exposure to the chemical components of Agent Orange. Both Veterans and Vietnamese Agent Orange victims' attorneys insisted that Dow and other chemical manufacturers had known about many 'other conditions' besides chloracne that likely resulted from herbicide exposures among their workers, including: liver damage, severe personality and psychological disorders, deaths "in certain instances", "blood-forming elements of the body", "yellow atrophy of the liver", and porphyria cutanea tarda.<sup>24</sup> They also cite a dermatologist Dr. Jacob Bleiberg whose unpublished letter to *The New York Times* in 1972 noted liver cancer, severe fatigue and an indication of diabetes among Diamond Alkali workers in the early 1960s.<sup>25</sup>

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<sup>23</sup> Note the symptoms that were experienced by these workers after the accidents. Other than skin lesion, chloracne, the early onset symptoms recorded then (such as nausea, loss of libido, disturbed sleep, etc.) looked very similar to what can be characterised as psychosomatic symptoms. In the wake of traumatic experience of toxic disasters, it was next to impossible to separate out chemical etiology from psychological one for some of these symptoms. This is a common problem whenever the question of toxic etiology was raised; it is difficult to tell whether the symptoms experienced by the people were the results of the toxic chemicals, or the result of fear and paranoia associated with the toxic disaster. (We have the contemporary cases of sick building syndromes, Gulf War syndromes, and other toxic chemical disasters in which toxic alarmism and psychosomatic symptoms often get conflated because of similar believed associated symptoms.) Chloracne was a distinct condition unique to chemical exposure. Chloracne had been known since the end of the nineteenth century. A German physician named Karl Herxheimer had characterised it as a kind of acne caused by an exposure to chlorine gas, and called it chlor-acne. Fifty years later, it was found that this etiology was incorrect—that it was actually caused by chlorinated aromatic hydrocarbons like dioxins—but nonetheless it was known as a 'real' physiological disorder.

<sup>24</sup> VAVA v Dow Brief for Plaintiff-Appellants 05-1953-cv pp.27-30.

<sup>25</sup> The Vietnamese plaintiffs' attorneys also mention that the defendants had tested dioxin on animals and knew that "dioxin, as little as 5 parts per trillion (ppt), were capable of producing birth defects, cancer and death in laboratory animals" (Amended Complaint 91-92). This appears to be a misquotation from the study in 1970s rather than in the 60s. When I inquired one of the plaintiff attorneys about the source of this information, he told me that this information was available prior to Bionetics study which was published in 1969, but was unclear where it came from. He first suggested the studies by Kimmig and Schultz at Boehringer. This is a study that is now well known to be the first study

According to the plaintiffs' attorneys, much of this information was concealed from the government and the military. And if some news of the toxicity of the chemicals reached the government officials, none had made an effort to "pull together all these fragmented pieces of information."<sup>26</sup> Once the government had the full disclosure of this information on the toxicity of 2,4,5-T from the manufacturers, it immediately terminated its use in Vietnam. This was the argument made by the veterans' attorneys. For them, this was an indication that it is possible that the Government may not have "selected 2,4,5-T at all if the manufacturers [had] told them about the contamination."<sup>27</sup>

During the war, in order to counter the accusation that they used 'chemical weapon', the US military claimed that the chemical 'defoliants' they used were essentially the same as commercial herbicides used domestically. If these chemicals had been used commercially for many years without any indication of its toxicity, the US military had no reason to suspect the toxicity of the component chemical of Agent Orange, 2,4,5-T. The manufacturers like Dow, on the other hand, knew about the presence of dioxin contamination of 2,4,5-T, and that it caused toxic

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to have identified the toxic contaminant of TCDD. But their study was primarily about chloracne. I could locate nothing on cancer and birth defects. The lawyer claimed that it was found in one of Dow's internal memos. This quotation does seem similar to Van Miller's (1976) and Kociba's (1975) study. But their study was done in the 70s. Although this information seems a little bit out of place, this detail is not necessarily crucial. After all, even after the Bionetics study came out the defendants did continue to provide the military with the chemicals.

<sup>26</sup> *Stephensons v. Dow et al (In re "Agent Orange" Prod. Liability Litig. 05-1760-cv) 2007 Second Circuit Court (reply brief for plaintiff appellants)*, p. 91

<sup>27</sup> *Ibid.* p. 90. This story presents an overly innocent picture of the US government and the military. Given the fact that (as seen below) FDA sat on the report by Bionetics Laboratory for over a year, and given how Bionetics Laboratory's preliminary result indicating the teratogenic effects of 2,4,5-T existed since 1966, it seems more plausible to conclude that government's decision to use these chemicals would not have been swayed by such information alone. (they had the full report by October 24, 1968, Wade 1971, p 612) Even if we believe that the government structure was so fragmented and inefficient that the people directly involved in the decision making about the use of herbicides in Vietnam were not aware of the information about the toxicity of 2,4,5-T, I do not know how that would excuse the government from their liability.

effects, but they nonetheless kept these facts secret from the military.<sup>28</sup> The veterans' attorney thus argued that the government contractor defence does not protect the defendants for supplying the military with defective product.<sup>29</sup>

The discrepancy between the Vietnamese and the veterans' plaintiffs regarding this question is reflected in the question of equivalence. While the latter argued that Agent Orange was essentially the same as the commercial herbicide, the former argued that it was a military herbicide. Citing a report by Dr. James R. Clary, a former government scientist with the Chemical Weapons Branch of the Air Force, the Vietnamese plaintiffs argued that military knew and accepted the fact that:

[when the military scientists] initiated the herbicide program in the 1960s, [they] were aware of the potential for damage due to dioxin contamination in the herbicide, and that the 'military' formulation had a higher dioxin concentration than the 'civilian' version due to the lower cost and speed of manufacture. However, because the material was to be used on the 'enemy', none of [them] were overly concerned.<sup>30</sup>

Then the manufacturers were complicit with the military in spraying toxic substance in Vietnam.

This is an argument for their international law claim, and the defendants would be guilty by association with the true criminal, i.e., the US military.<sup>31</sup> Wilful ignorance likely played some role

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<sup>28</sup> Regarding this secrecy, there is evidence that the reason why manufacturers were concerned about dioxin was because of the fear of regulation of commercial herbicides. In 1965, the reason why one of the scientists urged its management to "clean up its own house from within" (regarding dioxin contamination), was because he was concerned about 'restrictive legislation' (not 'cancellation of contract') for domestic market.

<sup>29</sup> It appears that in veterans' version, the US military was a victim.

<sup>30</sup> Brief for Plaintiff Appellant 05-1953-cv (Amended Appeal) p. 23

<sup>31</sup> On their domestic law claim, however, the government contractor defence applies squarely because it is an acknowledgement of the fact that the information about the toxicity of Agent Orange would not have swayed the decision of the US military to use the chemicals. The Vietnamese litigation soon came to a dead-end because of the strain placed by the need to make two incompatible arguments at the same time. On the one hand, they borrowed arguments from the veterans' case regarding domestic tort law; on the other, they maintained their international law

in both the military's and the manufacturers' negligence in conducting more thorough toxicity test of the chemicals. But, it appears, there were also more substantive reasons. Chloracne, for example, is not a lethal condition. It was observed only in the context in which the patients were exposed to a fairly high dosage of dioxin (in the order of parts per billion), which was mostly limited to occupational exposures and accidents. Furthermore, many of the other symptoms (like 'nausea, vertigo, headache, vomiting, disturbed sleep, nervousness, loss of libido, impotence, high cholesterol, raised blood fat level, unexplainable pain and extreme fatigue') were easily mistaken for psychosomatic effects of the exposure to the trauma of chemical accidents. Then, given the knowledge the manufacturers had in the 1960s, was Agent Orange a poison?

### ***Is Agent Orange a Poison?***

In 2005, Judge Weinstein argued that dioxin was a poison, but Agent Orange was an herbicide. The contamination of Agent Orange by dioxin was on the average in the order of 10 parts per million. Whether it was a poison or not, for Weinstein, depended on dosage. Then, is 2,4,5-T containing 10 ppm of TCDD a poison?<sup>32</sup>

A brief calculation (see Appendix 5) shows that at this concentration, the dosage at which people are exposed to the sprays would lie right around the threshold dosage that would result in chloracne. In very unlucky circumstances, depending on the wind, aberration in TCDD

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claim. Former acquitted the government (thereby placing all blames on the manufacturers), while the latter implicated the government (because it was about the manufacturers' complicity *with the government*, or the military, who was the principal suspect in violating the international laws).

<sup>32</sup> This is a difficult question to answer. Even if we take such comments like the one by Michael Newton and Alvin Young (2006) that "in scientific fact 2,4,5-T is less toxic than caffeine," with a grain of salt, how toxic is 2,4,5-T which contains 10 ppm of TCDD? (Newton and Young 2006)

concentration, individual susceptibility, or through repeated exposures, this amount of chemicals sprayed could result in chloracne. Should the use of such substance be considered as intentional poisoning?<sup>33</sup>

Although, early-onset effect of dioxins like chloracne is now known to be a sign that other more serious conditions can follow, it is not a lethal condition or a severely disabling disease in of itself. More relevant question is how much Dow and other chemical manufacturers knew about late-onset conditions like cancer and birth defects, and what they knew about it. As far as the available evidence goes, the answer seems to be: not very much.<sup>34</sup>

This situation, however, changed drastically in 1969, when new evidence of toxicity of 2,4,5-T came to light. In the next chapter, I explore how the emerging awareness of carcinogenic, teratogenic and mutagenic nature of chemical substances like dioxins affected the knowledge that eventually convicted Agent Orange as a poison.

But before that, let me take a brief detour and recount the story of poison from my field site in A Luoi valley.

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<sup>33</sup> Incidentally, compared to other alleged health effects of TCDD like cancer and birth defects, chloracne occurred at a higher dosage.

<sup>34</sup> Plaintiff counsel's evidence is ambiguous in this respect. Among the series of incriminating evidence about the defendants' knowledge about toxic effects of their chemicals, there is a couple of circumstantial evidence suggesting that manufacturers knew of teratogenic and carcinogenic properties of dioxins on laboratory animals.

It was still in the early days of the war. The people of the neighbouring village of Ba Lach, which was located slightly further from the US A So airbase, stayed on in their home village a bit longer than the people of A So village, who had fled from the American presence. The villagers were spending most of their time in the hills south of their village, where their swiddens were located. And it was from there that they launched one day, their operation on the Saigon soldiers and the Americans using their locally grown *la ngon*.

Lá Ngon, or *Gelsemium elegans*, also known as allspice jasmine, was often called the ‘lover’s poison’ among the hilltribes of A Luoi valley, for it was the poison of choice for the love-sick youths in committing suicide. In the hills that surrounded the valley, the evergreen vines with oval leaves the size of children’s palm existed in abundance. Toward the end of rainy seasons, the flowers with yellow petals blossomed, proclaiming its presence among the lush green shrubs. Any other time of the year, it looked like an ordinary vine with no distinctive features. Even then, everybody in the valley, including children, could tell this specie of vine apart from all others. It was so poisonous, ‘three leaves would be enough to kill a grown man,’ Quynh Loc said. The only reliable antidote available locally for a long time was human feces, which, if administered in timely fashion, could induce the individual to purge the ingested poison along with whatever else that was in his or her stomach.

Scientists who have studied *gelsemium elegans* have found that 25 mg of crude alkaloid fraction (CAF) of the substance per kilogram of bodyweight resulted in decimation of an entire cohort of laboratory mice when it was administered orally (Rujjanawate et al 2003).<sup>1</sup> (1 g of CAF corresponds to approximately 5 g of fresh leaves). At this lethal dosage, the alkaloid toxins contained in *gelsemium elegans* caused nausea, analgesia, convulsion and death. The potency of the poison went in descending order from roots, leaves, flowers and stems. The Katu people of A Luoi valley preferred to use its leaves instead of its more potent roots (Fung et al 2007).

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It was still early in the war against the Imperial America. Some time after the murder of five cows and seven villagers by the Americans and their collaborators had prompted the villagers of A So community to withdraw further into the mountains bordering Quang Nam and Laos. A directive came from somewhere above, which told the villagers of the neighbouring Ba Lach village to begin collecting the leaves of allspice jasmine (nobody knew the exact whereabouts of the originator of the order because the line of command was always kept secret in order to protect the leadership). For over a month, they diligently saved the leaves in their *gui* basket<sup>2</sup> in secrecy. Each household was given the objective of gathering fifty kilograms of the leaves and crush them into a paste.

One evening, at the end of one month, three hundred villagers hoisted their *gui* under the

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<sup>1</sup> 25mg/kg CAF corresponds to 125 mg/kg fresh leaf. For a 50 kg human, it would be 6.25 g. probably a bit more three leaves? Just as a comparison, LD50 of arsenic alkali on rats is 70mg/kg

<sup>2</sup> basket woven out of split wood or bamboo.



cover of darkness and crawled up the hill, divided into three groups to avoid detection. Once they located the appointed spot upstream of the creek that ran through A Tok base, they quietly slipped the leaves into the water. It was 3 a.m., Old Quynh Loc remembered clearly even four decades later.

By dawn, the soldiers who were out at patrol from the base would have returned to the camp and found it in a state of chaos: soldiers writhing on the ground; soldiers coughing up blood; soldiers running around shouting about the magical attack by the enemy. The two prisoners, who would have foreseen this plan by some magical means, declined to eat or drink that morning, and unscathed, they eventually escaped the camp under the chaos. They arrived at the rebels' hiding place sometime in the morning. In the damp cave hidden by the vines, they told the villagers what they had witnessed. The operation was a success.

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Half a century later, Old Quynh Loc has found a new use for allspice jasmine. Nowadays, whenever he encountered the plant during his forest strolls (the plant was becoming rarer these days), he would gather a few leaves, bring them home, and throw them into the pool of manure behind their house. Using manure for fertilizer was a new practice that came with becoming a member of a modern nation state. He knew it was necessary for improving and maintaining the quality of the rice paddies, which was a technique the locals learnt from Kinh people after the end of the war. The soil was so poor, especially in this area so close to the former US A So airbase, that fertilizers (both chemical and organic) were essential (thus the manure pool behind his house). But

the horde of insects its pungent smell attracted was a problem. If the leaves of allspice jasmine had the effect of poisoning humans, it might also work for the insects to keep maggots and mosquitoes away, Quynh Loc reasoned. It was his own discovery, he said, and it seemed to be working well enough.

Quynh Loc did not seem overly concerned about the possibility that the toxin from allspice jasmine mixed with the fertilizer may eventually poison him and his family through food. He probably had a good reason for not being worried. Allspice jasmine was probably not like dioxin. It probably did not persist in soil, or accumulate in the food chain. But I hesitated to ask him what he thought. Asking questions about the present risk of toxic substance was tricky, because there was always a danger of conjuring up an anxiety in people's mind just by speaking about it. In this occasion, after a gift of fantastic(al) story Quynh Loc gave me, I dared not push my luck.

### ***Poison in A Luoi***

“In warfare it is permissible ‘to stand and deliver’ - to look the enemy squarely in the eye and shoot him - but not to look the other way and then use dioxin to poison his food, land and water.”<sup>3</sup>

When the Vietnamese Agent Orange litigation began in 2004, George Fletcher, an international law professor at Columbia summarised the paradox of proscription against the use of chemical weapons thus. Everybody knows that war is terrible. Then what is so special about poisoning in the context of already terrible war?

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<sup>3</sup> New York Times Feb 28, 2005 (<http://www.nytimes.com/2005/02/28/nyregion/28orange.html> accessed June 29, 2011)

Poison taboo has a long history in the West. Ancient Greeks and Romans tried to prohibit poisoning of enemy water in war. Laws against the use of poison in the West dates back to BC 82, when Sulla of Rome attempted to curtail political poisoning that was becoming of epidemic scale in Rome (Casarett and Doull 1980). Modern proscription of poison in war is often attributed to Hugo Grotius. In his treatise, Grotius argued that poisoning was considered to be ‘dishonourable’,<sup>4</sup> but this was not because of the inherent quality of poisoning. In 1625, he wrote that proscription against poison as a weapon “originated with kings, whose lives are better defended by arms than those of other men, but are less safe from poison, unless they are protected by some respect for law and by fear of disgrace” (quoted in Price 1995: 81). With time, this legal proscription became ingrained in the people’s conscience in the form of moral abhorrence of poisoning. Poisoning became synonymous with cowardice and effeminacy: something we are supposed to feel ‘instinctive recoil’ from.

In the twentieth century, the ‘civilized’ nations of Euro-America began to make efforts to codify this moral sanction against poison in war through international conventions (Price 1995). The Geneva Convention of 1924 is said to have come out of the horror of poison gas warfare during the First World War. Chemical weapon was thought to be problematic because it caused ‘unnecessary suffering,’ its effects often outlasting the timeframe of the war itself. But it was not entirely certain if the chemicals used during the World War I were of that terrible nature.

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<sup>4</sup> VAVA v Dow et al 04-CV-0400 BRIEF AMICI CURIAE OF THE CENTER FOR CONSTITUTIONAL RIGHTS, EARTHRIGHTS INTERNATIONAL AND THE INTERNATIONAL HUMAN RIGHTS LAW CLINIC AT THE UNIVERSITY OF VIRGINIA SCHOOL OF LAW

In the 1960s, while the legal arguments against Agent Orange stalled, the popular discourse and abhorrence against the use of the chemicals in Vietnam slowly gained currency in the West through the association with the past chemical warfare. In April 1965, the *New York Times* ran an editorial titled “After Fifty Years the Cry of Ypres Still Echoes—‘Gas!’”<sup>5</sup> The use of tear gases and chemical herbicides in Vietnam recalled the spectre of chemical gas attack in Ypres half a century earlier. But the editorial claimed that this vilification of poison gas weapons was out of proportion with the actual casualty it caused during the war. In fact, the permanent casualty due to the gases used in Ypres was relatively low. “In 1918, the Germans fired half a million mustard gas shells which produced 7000 casualties, but only 87 deaths. [...] Though incapacitating for days, weeks or months, it did not often maim. Very few had permanent after-effects.”<sup>6</sup> Regardless, the “vision of the blue-faced men at Ypres, choking to death, has left an indelible impression upon the mind of the world.” When the news that US military was using ‘chemicals’ in Vietnam war came to the open in the 1960s, the memory of gas attack in Ypres fifty years earlier still caused ‘instinctive recoil’ among the American public.<sup>7</sup>

Then what is really behind this chemical weapons taboo? Richard Price argues that the prohibitions against the Chemical Weapons in these conventions symbolise the “hierarchical domination in the international system” (1995: 95). Hague convention of 1907 prohibiting the use

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<sup>5</sup> “After Fifty Years the Cry of Ypres Still Echoes—‘Gas!’” *New York Times* April 18 1965.

<sup>6</sup> *Ibid.* p 46.

<sup>7</sup> The Army calls the tear gas like CS and CN “benevolent incapacitator”. It is not completely benevolent, for it is said to cause about 1 percent fatality, but much less damage in the long run than shrapnel’s and bullets. What is cruelty? What is ‘unnecessary suffering’? These are questions for another time. Here let me continue with the story about poison.

of “poison and poisoned weapons” was binding only for the contracting powers in the West. It was thought of as an agreement between the ‘civilized nations.’ In order to qualify for the membership of this civilized world, a nation had to abide by these laws of warfare. Conversely, those who did not qualify for this membership did not deserve the protection from such an attack. As the Italian use of chemical weapon in Ethiopia, and the relative lack of international condemnation against it showed, at the time, these rules were thought *not* to apply in wars against colonies.

In recent years, chemical weapons have been called the “poor man’s bombs.” They were often low-tech and could easily enter the arsenals of poorer nations, giving them a technology that could potentially topple the existing order of power.<sup>8</sup> Powerful nations were assumed to be moral enough to use its force judiciously without bringing wonton destruction through the use of weapons of mass destruction. Weaker nations were of suspect because they were more easily hijacked by power mongers or swayed by illogical passions like religions, racism and nationalism (or so the argument went). Whatever the origin of obloquy against the use of poison in war, in the 1960s, such moral norms could lend the anti-Vietnam War activists an instrument in riling the populous against the American conduct in Vietnam. It was, however, a completely different story when it came to imputing guilt in court of law decades after the fact. Now, the victims of Agent Orange in Vietnam resort to such norms codified in laws of nations in filing grievances against the manufacturers of the chemicals, but it appears the hurdle for such a tactic was far greater than persuading the public in time of war.

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<sup>8</sup> “After Fifty Years the Cry of Ypres Still Echoes—‘Gas!’” New York Times April 18 1965

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“In the past, when we fought, we didn’t fight with guns and swords. We fought with poison,” said Quynh Loc with a glint of pride. Poison was their weapon of choice since the time immemorial. Poison taboo in the West did not exist here in A Luoi valley. Ironically, at the heart of the land poisoned by dioxins, we encountered people, whose customs and history had no familiarity with the moral obloquy against the use of poison in a battle. Poison was a weapon of the weak, as Price (1995) wrote polemically in his paper; Katu people of A Luoi knew that the strongest can be felled by the weakest through the use of poison. This was why, my research assistant Duc thought, there was very little physical violence among the Katu people in the past. Poison was not a sign of cowardice or cruelty, but evidence of perseverance and wisdom (even though there was also evidence that suggested how poison was now stigmatised to a certain extent, as will be discussed in Chapter 8).

Did it make sense at all for them, then, for the attorneys of the victims of Agent Orange to insist on the point that “dioxin-laced” Agent Orange was a poison? I certainly have no intension of making a *tu quoque* argument and acquit the US military for their chemical warfare. But when the people of A Luoi felt indignant against the American use of Agent Orange, it seems, it was not because they employed poison in war, per se. What they could not countenance was something else.

“Poison that cause birth defects in unborn children or cancer decades later, this we had never seen before,” said one. “It was indiscriminate. It affected everyone and whatever on the ground at

the time of spraying. Not like guns and bombs which had definite targets,” said another. It was not whether Agent Orange was a poison or not that mattered (as plaintiffs’ lawyers would insist). As a sixteenth century toxicologist Paracelsus said, everything is a poison, after all. What mattered was what kind of poisonous effect it had and how it was used. The keywords here are ‘latency,’ ‘indiscriminacy’ and ‘chronicity’.

The effect of Agent Orange was a new type of poisoning previously unconceivable to the ethnic minority people in A Luoi. This was why, it seems to me, the extent of the latent effects of the chemicals on their health was not recognised for a long time in A Luoi Valley, although, of course, there were also other reasons for why chemical etiology of Agent Orange related diseases went unrecognised for so long.

“All substances are poisons; there is none which is not a poison.

The right dose differentiates a poison and a remedy”

—Paracelsus<sup>1</sup>

### *New Paradigms of Poison*

In the 1960s, new paradigms of poison emerged. Dosage was still important in understanding the consequences of poisoning. But it no longer differentiated a poison from a remedy as Justice Weinstein of the federal district court of New York had assumed. Beneath the threshold of lethal dosage or acute poisoning, the world discovered previously undetected *risks* of various, insidious and horrendous diseases like cancers, auto-immune diseases and birth defects. Just as the dazzling career of Agent Orange was drawing to a close in Vietnam, poisoning salient in the mind of the public was changing. The new types of poisoning we now had to contend with were ‘teratogenesis,’ ‘carcinogenesis,’ and ‘mutagenesis’. Often mediated through the environment and having the latency of up to decades, they were largely discernible only through *statistical pattern* of diseases and conditions.

Latency is a common feature of poisoning. For example, the victims of arsenic poisoning typically feel nauseous several hours after the meal. This is followed by violent vomiting and diarrhoea, then a severe stomach pain, thirst, loss of voice, writhing, and eventual death would

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<sup>1</sup> Weinstein (2005: 59) Paracelsus was a sixteenth century ‘father of toxicology’



follow after two or three days (Whorton 1974). This temporal lag is precisely what often lies at the heart of suspense in detective mysteries involving poisons. It allows the poisoner to leave the scene of crime unnoticed, and conceal his or her identity.

But in the nineteenth century, the latency that was widely recognized was a matter of hours or days<sup>2</sup>; not years or decades through which “possible genetic effects of long-term exposures” to environmental poison such as dioxins manifest themselves (Terry 1964).<sup>3</sup> The latency of the new types of poisoning that captured the attention of public health experts and lay public in the mid-twentieth century was qualitatively different, requiring entirely different kind of vigilance and response.

The realization of this new threat came gradually. On May 24, 1960, at the Fifty-third Annual Meeting of the Air Pollution Control Association in Cincinnati, the Deputy Surgeon General of the United States, John D. Porterfield remarked about how their “dazzling technological progress since World War II has yielded a random harvest of mixed blessings, and a bumper crop of new health challenges.” To Porterfield, these new challenges were radically different from traditional health concerns.

For one thing, the nature of the assault on the human organism is very different. The public health professions are familiar with the infectious disease pattern-exposure, followed at a predictable interval by recognizable symptoms, generally followed by recovery and some degree of residual immunity. The time-span between exposure and onset is short. The effect is comparatively easy to trace to its cause. [...] By contrast, the

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<sup>2</sup> See Appendix 4

<sup>3</sup> 1964 was also the year National Cancer Institute commissioned a general pesticide screening, which would eventually disclose incriminating facts about Agent Orange in 1969.

chronic diseases may have multiple causes, some intrinsic but often involving one or many environmental factors. We are concerned here, not primarily with acute illness but with the slow accumulation of toxic chemicals or radiations over a period of years (Bookchin 1962: Appendix A).

In 1964, Luther Terry, the Surgeon General of the United State characterised this new kind of poisons which were emerging in public consciousness, thus:

Except with the most toxic materials, there is necessarily a time lag between the introduction of a new material or process and the recognition of deleterious effects. The lag is apt to be greater still where the effects are subtle, non-specific deterioration of general health and efficiency. The effect of occupational exposure is sometimes slow and un-dramatic, and may easily be mistaken for the normal process of deterioration”<sup>4</sup>

This new discourse on toxic substance was entangled with what would be minted in the 1970s as ‘epidemiologic transition’(Omran 1971). Throughout the 1960s, there was an increasing awareness among the public health experts that the diseases of foremost concerns were no longer infectious diseases but “degenerative and man-made diseases” (ibid.: 516). These man-made diseases were attributed to new synthetic chemicals that were being released into the world. This type of poisoning could have latency of up to several decades, and the primary concerns, as would be chanted in the 1970s, were their ‘carcinogenic,’ ‘teratogenic’ and ‘mutagenic’ effects (eg. Galston 1971).<sup>5</sup>

This is not to say that the risk of chronic exposure to low dosage of toxic chemicals was completely unknown before then. Around the turn of the nineteenth century, in the United States,

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<sup>4</sup> ibid.

<sup>5</sup> Eg. Galston, Arthur. Some Implications of the Widespread Use of Herbicides BioScience, Vol. 21, No. 17 (Sep. 1, 1971), pp. 891-892

physicians like Frank Draper, James Putnam, Frederick Shattuck and William Hills became ardent advocate against the use of arsenics around home (Whorton 1974). Such concerns, however, went largely unnoticed by the public. In the nineteenth century, a significant number of physicians still held the practice of administering poisonous substance for therapeutic ends (ibid). The toxicological tests of new chemical substance also looked only for toxic effects with short latency. The dictum of Paracelsus—that dosage separates a poison and a remedy—was still held as the dominant tenet of toxicology.<sup>6</sup>

In the 1960s, just as North America was entering the age of environmentalism with the publication of Rachel Carson's *Silent Spring* in 1962, the US military began to use chemical herbicides in Vietnam. Chlorinated hydrocarbons like DDT and the contaminant of Agent Orange, dioxin, became known as environmental hormones or POPs (persistent organic pollutants) in the 1980s. The common characteristics shown by these poisons were that they were ubiquitous, persistent, accumulated in food-chain, and their toxic effects *could* manifest themselves years after the first exposure; and since the exposure to these poisons did not necessarily result in any harmful effects, but rather they were associated with elevated *statistical rate* of certain diseases *in a population*, the experts referred to them as 'risk factors'. These 'statistical poisons' rewrote the definition of poison in a radical way, giving rise to new concerns, sensibilities and responsibilities.

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<sup>6</sup>For example, by the end of the nineteenth century arsenic substances were widely used in commercial merchandise in Western Europe and North America. The pigments such as Paris green and Scheele's green which contained arsenics were used in wallpapers, playing cards, fabrics, toys, green candles, wrappers for sweetmeat, and even used as preservatives for apple tarts. In the second half of nineteenth century, several European and American physicians began to warn the public of the danger of chronic arsenic poisoning, in particular through arsenical wallpapers. Mild arsenic poisoning caused lassitude, headache, irritated mucous membranes, and skin irritation (Whorton 1974). In most cases, the transient symptoms disappeared once the patient was separated from the sources of exposure, but there was also a reported case of patients with chronic arsenic poisoning which led to paralysis and even to death.

The saga of Agent Orange and the public condemnation against it was entangled with this wider change in the conception of poison.

### ***Demise of 2,4,5-T***

On October 29, 1969, Dr. Lee Dubridge, then the President's scientific advisor, made an unusual move for someone in his office by publicly announcing at the White House the curtailment of the use of 2,4,5-T both domestically and in Vietnam.<sup>7</sup> This announcement came after new scientific evidence showing that 2,4,5-T induced birth deformity in laboratory mice was brought to light by a rather questionable route.<sup>8</sup>

In 1964, the National Cancer Institute commissioned a general pesticide screening by Bionetics Research Laboratory.<sup>9</sup> In June 1966, a preliminary result indicated teratogenic (or birth-defect causing) nature of 2,4,5-T. However, the follow-up experiment was not carried out for two more years, and it was not until September of 1968 that the result was delivered to the National Cancer Institute. The Food and Drug Administration (FDA) also received a copy of this report in October 1968, but this knowledge may never have seen the light of day had an official at the FDA

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<sup>7</sup> It came almost as a surprise given how a decade-long protest by the anti-DDT activists had brought no regulations of DDT yet at the time, despite the fact that there was more evidence of its toxicity. Kramer Joel. 1969 "Yesterday Cyclamates, Today 2,4,5-T, Tomorrow DDT?" *Science* 166; Schmeck Harold, 1969. "Federal DDT Ban Urged in Petition." *New York Times* Nov 1, 1969.

<sup>8</sup> This announcement was largely ignored by the Department of Agriculture and the Department of Defence for a few months. Also, the 2,4-D, which was also suspected to be toxic was acquitted on the basis of insufficient evidence. Nelson argues that the restriction of 2,4-D would have posed greater difficulties to the government because it was so widely used in the United States. DuBridges stated that 2,4,5-T was not used in the United States in residential area, but it appears this was also false, because it was widely used in a mixture with 2,4-D on lawns. (Wade, Nicolas. 1971. *Decision of 2,4,5-T: Leaked Reports Compel Regulatory Responsibility*. *Science*. 173, Nelson, Bryce. 1969. *Herbicides: Order on 2,4,5-T Issued at Unusually High Level*. *Science*. 166.

<sup>9</sup> Report of the Advisory Committee on 2,4,5-T to the Administrator of the Environmental Protection Agency 1971. p. 39

not leaked a copy of this report to a public advocacy group, *Nader's Raider's* investigator in July of that year. This investigator brought the report to the attention of Harvard chemist Mathew Messelson, who in turn made this information known to the officials at the White House (Wade 1971).

Within a month, it was reported in the United States that just the summer past, “several South Vietnamese newspapers printed photographs and stories about deformed South Vietnamese babies” (Nelson 1969). All of a sudden, the suspicion that Americans were using birth-defect causing agent in Vietnam began to look real. For many years, the US Administration had maintained that the herbicides used in Vietnam were not harmful to animals and humans. But here was a piece of evidence showing that this assumption was wrong.

What made the situation worse for the White House was that the information was available possibly for over two years but was concealed from the public until then.<sup>10</sup> With this new evidence in hand, Messelson and other scientists, who had been protesting against the use of the herbicides in Vietnam, pressed the government for immediate action: unless something was done promptly, the result of this study would soon be known to the public and “a torrent of criticism will ensue.”<sup>11</sup> Given the wide usage of 2,4,5-T in Vietnam and the publicity it had gained in the United States, this was not an empty threat. White House was thus given a choice to save its face by coming out

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<sup>10</sup> The attorneys of Vietnamese Plaintiff claim that Dow had a hand in suppressing the Bionetics study until 1969. (an un-cited internet resource, *Monarch: The New Phoenix Program*, edited by Marshall Thomas, also mentions this. But I have not seen any other confirmation of this information.)

[http://www.bibliotecapleyades.net/archivos\\_pdf/monarch\\_newphoenixprogram.pdf](http://www.bibliotecapleyades.net/archivos_pdf/monarch_newphoenixprogram.pdf)

<sup>11</sup> Nelson, Bryce. 1969. Herbicides: Order on 2,4,5-T Issued at Unusually High Level. *Science*. 166

on its own volition or to face a scandal.<sup>12</sup> After many years of suspected toxicity, what finally put a nail to the coffin, therefore, was the indication of teratogenic effects of TCDD that contaminated 2,4,5-T.

In the early 1970s, there was still no clear answer as to which component of Agent Orange—2,4-D or 2,4,5-T, or its contaminant TCDD dioxin—were toxic. It was known that dioxins were extremely toxic, but there were very few scientific studies conducted on the health effects of low dose exposure to dioxins until then.<sup>13</sup> But once the herbicidal warfare in Vietnam was terminated in 1971, and the focus was shifted toward domestic usage of the herbicide 2,4,5-T, Agent Orange would become increasingly spoken in terms of 2,4,5-T, and 2,4,5-T in terms of its contaminant, dioxin.

Before the war began, far more disconcerting may have been the toxicity of 2,4-D, which was, some scientists claimed, twice as toxic as 2,4,5-T(cf. Orians and Pfeiffer 1970). The toxic effects of 2,4-D was also more discernible. In the 1950s, there were also several clinical cases of farmers who used the herbicides and became ill. In 1959, for example, Dr. P. Norman and his colleagues (1959) reported cases of farmers exposed to 2,4-D who developed peripheral neuropathy. Hours after exposure during the mixing of 2,4-D for agricultural application, these farmers experienced severe pain, parasthesia and paralysis.<sup>14</sup> The recovery of these conditions was

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<sup>12</sup> This version of history is slightly different from the one described by the plaintiff attorneys of the Veterans' Agent Orange case (*Stephenson and Isaacson v Dow et al*). see Interlude

<sup>13</sup> Beside the studies by Kimmig and Schultz (1957), there were a few Japanese studies on chemical analysis of the substance (Tomita and Ueda 1964). Around 1970, several studies on laboratory animals were published (Buu Hoi 1971, Courtney et al 1971) focusing on its teratogenic and carcinogenic effects. By 1982, TCDD was one of the most studied toxic chemicals. (Poland and Knutson 1982)

<sup>14</sup> Peripheral neuropathy was also one condition people of A Luoi valley in Vietnam associated with the exposure to

not complete even years later.<sup>15</sup> However, the concern about the toxicity of 2,4-D was overshadowed by the concern about 2,4,5-T until the 1990s, when the development of molecular toxicology began to point to renewed concerns about the toxicity of 2,4-D (Marshall 1993). As far as I can glean from the literature, these two decades of relative silence on 2,4-D had nothing to do with the presence of decisive evidence that vindicated it.

In the post-war era, among all other symptoms and diseases reported in association with the herbicides, chloracne, porphyria cutanea tarda (also symptoms expressed on skin) and peripheral neuropathy were the only conditions that persistently appear in the literature on the chemical herbicides used in Vietnam War. Most other symptoms and diseases reported in the Interlude, which came from clinical cases of occupationally exposed people, were not the ones that would eventually become the disease of concern in the postwar era.<sup>16</sup>

In a brief submitted to Court for *VAVA v Dow et al*, the US government contended that the government knew about the risk of these chemicals as much as (or more than) the manufacturers

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chemical herbicides even before the discourse on Agent Orange became wide-spread in the 1990s. Because it is an early-onset condition, the link between some form of neuropathy and the herbicides was experientially discernible. The locals used to call the chemicals, ‘*thuoc liet*’, or ‘paralyzing agent’ in the post-war era before the knowledge about Agent Orange and dioxin became common.

<sup>15</sup> Rachel Carson also mentions 2,4-D as having been shown experimentally to cause chromosomal damages (though at what dosage, she does not say). There were field experiences of more indirect ways in which 2,4-D caused toxic effects. 2,4-D caused sharp increase in nitrate content in corn, sugar beets and pasture. When animal feed containing high level of nitrate is given to the cattle, it is turned into toxic nitrite through the action of micro-organism in the rumen.

<sup>16</sup> There is also liver disease and atrophy of liver. The IOM 2008 concludes, however, that they observed no association of cases of liver disease with TCDD exposure. Liver is a primary target of many toxic chemicals. It has many detoxifying enzymes. In laboratory rats, they found liver damage including hepatocyte hypertrophy, multinucleated hepatocytes, inflammation, pigmentation, diffuse fatty change, necrosis, bile duct hyperplasia, bile duct cyst, nodular hyperplasia, portal fibrosis, and cholangiofibrosis. But clinical cases of liver damage among the veterans exposed to Agent Orange showed no discernible pattern to conclude association.

did, although this knowledge was limited to “chloracne and certain forms of liver damages.”<sup>17</sup>

Ostensibly at least, more serious diseases like cancers and birth defects were not known.

### ***Testing for Toxicity***

But why, as a reporter for *Science* wondered in 1969, “were these herbicides allowed to be widely used in Vietnam before scientific studies on animals had been performed?” (Nelson 1969). All of a sudden, it appeared as though there was a complete oversight in testing these chemicals for safety. In 1970, Thomas Whiteside admonished the Department of Defence for not conducting teratological tests on the herbicides:

In a quarter of century since the Department of Defence first developed the biological warfare uses of this material (2,4,5-T), it has not completed a single series of formal teratological tests on pregnant animals to determine whether it has an effect on their unborn offspring.<sup>18</sup>

But perhaps it is an unfair accusation to make, given the fact that before the 1960s, teratological test on pregnant animals was not part of the routine procedure for product safety testing. The government agencies had established no guidelines for it, and few scientists even considered it.

There had been several animal studies on both 2,4-D and 2,4,5-T ever since these chemicals were invented, but the kind of testing done in the pre-1960s period was qualitatively different from the kind of testing that became required in the 1970s. Here are some of the examples of the

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<sup>17</sup> VAVA v. Dow Supp. MDL No. 381, 04-CV-400 (E.D.N.Y. ) Amicus Curea US brief 05-1953-CV p. 7

<sup>18</sup> In Weisberg p.3 This was not just the problem for Vietnam, because the same chemicals were also being used domestically as weed killers. In 1971, Congressman Bertram Podell said:

The circumstance demonstrates how dangerously freely we have been using chemical and biological poisons for domestic purposes, including DDT and other pesticides without knowing how serious their long-range impact may be (cited in Neiland 1970: 225)



toxicological tests performed in the early days of these herbicides.

- In the 1940s, Ezra Kraus at Fort Detrick experimented 2,4-D on himself, ingesting 0.5 grams of the substance per day for three weeks. He found no ill effects.<sup>19</sup>
- In 1946, Nancy Bucher looked at the effects of 2,4-D on mice sarcoma and also found no effects. This study was designed to examine if 2,4-D can *reduce* sarcoma, rather than *cause* sarcoma.<sup>20</sup>
- In 1953, scientists at Dow Chemical tested 2,4,5-T on dogs. It was found that at highest dosage of 20 mg per kg of body weight per day, 2,4,5-T was lethal for dogs, but “animals that survived lower dose levels did not develop significant lesions in the liver or other organs” (Butler 2005: 540).<sup>21</sup>
- In the mid-1950s, Karl Schultz performed rabbit ear test on the precursor of 2,4,5-T, 2,4,5-trichlorophenol. He found that pure sample of trichlorophenol did not cause inflammation in rabbit ear, but the sample contaminated with TCDD (tetrachlorodibenzodioxin) did. He concluded that it was TCDD which caused a skin condition called chloracne in humans. Schultz also tested the sample on his left arm and found that it induced the same skin lesion as was seen in the factory workers exposed to 2,4,5-T (Allen 2004).

Note that except for Schultz’ experiment, which led to the modification in the production process in companies like Boehringer to reduce TCDD contamination, all these tests came up with the conclusion that 2,4-D and 2,4,5-T were safe, at least at the dosage the factory workers or people applying these chemicals in their fields would be exposed to them. Whatever the validity of this assessment,<sup>22</sup> one might take note of how crudely and carelessly these tests were designed and

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<sup>19</sup> Butler 2005, Connections: The early history of scientific and medical research on ‘Agent Orange’. Journal of law and policy 525

<sup>20</sup> Nancy Bucher biography, ([www.ascb.org/files/profiles/Nancy\\_bucher.pdf](http://www.ascb.org/files/profiles/Nancy_bucher.pdf) accessed March 23, 2011)

<sup>21</sup> Original documentation comes from (Drill et al 1953). It would be curious to see how long the experiment took place, and whether the researchers considered accumulation of the chemical in the body. Considering how the military grade 2,4,5-T had contamination of 10 ppm TCDD dioxin, I suspect that the dosage of 20mg/kg is relatively low.

<sup>22</sup> Arthur Galston calculated that people in Vietnam could ingest 50 mg or more 2,4,5-T and 2,4-D per day per kilogram of body weight by drinking contaminated water. This dosage would have been twofold higher than the lethal

conducted. For instance, none of these studies tested the chemicals for long term health effects and reproductive effects, which they were later suspected to have on humans. To our utter disbelief, Kraus and Schultz even tested the chemicals on themselves.

With a benefit of hindsight we might be horrified by Kraus' and Schultz's foolhardiness. But until the 1960s, the question about teratogenesis and carcinogenesis was largely absent. By 1970, however, 'carcinogenesis', 'teratogenesis' and 'mutagenesis' had become a staple vocabulary in toxicology such that it appeared that the lack of testing of chemical for these toxic effects was a complete oversight—as if overnight the world came to realise that there were whole new types of poisoning one needed to be concerned with, and forgot, also overnight, that few even suspected it before then.

### ***Teratogen, Carcinogen, Mutagen***

Until the mid-1960s, product safety tests rarely included examination of reproductive and developmental effects on offspring through maternal exposure. As teratologists Wilson and Warkany (1985: 293) wrote, “[b]efore 1960 the *concept of* searching for embryotoxic/fetotoxic effects after *in utero* exposure and the application of any adverse findings to estimating human teratological risk simply had not evolved”. Here, the critical event that altered the consciousness of the scientists and the public was the thalidomide crisis of 1962.

Thalidomide was first marketed in 1958 as a sedative drug. It was thought to be a multi-purpose drug, but especially effective for treatment of morning sickness in women. Then

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dosage found in Dow study on dogs in 1953. At this point, however, the idea that it was TCDD contaminant that was responsible for all the toxicity was yet to be discussed widely.

few years after it came out in the market, it was found to cause malformation in fetus. It was a sensational case of iatrogenically induced birth defects. Thousands of children were born with limb-shortening birth defects in Europe, Australia and Japan.<sup>23</sup> It was a wake-up call for the entire world to the possibility that the new chemicals and drugs that were amassing the market then were also posing threat to the unborn babies. Wilson and Warkany (1985) remembered that this incidence gave the momentum to teratologists who were beginning to organize themselves into a sub-discipline of its own in the 1950s.

Teratology, or the study of congenital malformation, was a relatively old discipline of science. In the eighteenth century, teratology was a flourishing science in France, where teratologists created multi-headed monstrous hydras by making incisions on the bodies of microorganism, or tried to create new species by changing the fetal environment. It was, therefore, literally a terato (monster)-logy (study): a study of monster breeding (Dally 1998). Most of the earlier studies were conducted on invertebrates. It was not until the 1930s that teratologists began to study about mammalian fetus, and even then, the focus was to *produce* malformation, rather than to find out about the causes of fetal deformity outside the laboratory.

Similar thing can be said about chemical mutagenesis studies. The study of mutagenic effects of chemical substance began in the post-World War II era (Frickel 2004). According to Scott Frickel (2004), scientists like Charlotte Auerbach tested substances like mustard gas for mutagenic effects, but these studies on chemical mutagens soon went out of favour. Unlike chemicals, whose

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<sup>23</sup> The Americans were somehow spared of this tragedy by a caprice (or diligence) of Frances Kelsey, an FDA drug evaluator, who kept on delaying the license in the United States until the scandal broke out.

ability to produce mutation was unpredictable, radiation could produce mutations at more controlled rate. And for these geneticists who were interested in the study of mutation, rather than product safety, radiation offered itself as a more convenient tool for studying mutation.

Toward the end of 1960s, some geneticists began to express concerns over the consequences of various synthetic chemicals released to the environment on the genetics of the human population. They called these chemicals, ‘environmental mutagens.’ In 1969, Environmental Mutagenesis Society was established, and the First International Conference on Environmental Mutagenesis was held in Asilomar California in 1973. All of a sudden, it appeared as a complete astonishment that so many new chemicals were introduced to the market without proper testing for “mutagenicity, carcinogenicity, or teratogenicity”(Bendix 1974).

Once again, this does not mean that there was no knowledge about carcinogenic substance or external influence on fetus resulting in deformity until then. For instance, for centuries, it was known that alcohol consumption by pregnant women could injure the fetus. It was also known that infectious diseases such as syphilis and rubella could damage fetus. But these were considered to be anomaly. In the mid-twentieth century, medical students were taught that placenta gave perfect barrier to toxic substance which protected the fetus (Dally 1998). It was also increasingly believed that any deficiency and defects of the fetus were due to defective gene. In the post-WWII era, some studies linking congenital malformation to *in utero* exposure to radiation and other causative agents such as nutritional deficiency, drugs, and chemicals began to appear. Institutionally, in the 1950s, teratologists began to organise conferences and workshops in order to gather support for the

studies on the “problems relating to the causation, mechanisms and manifestations of abnormal embryonic development” (Wilson and Warkarny 1985). This was the first time the effort was made to bring experimental and clinical interests together, and to call for communication between different specialities. As the matter of fact, as historian Anne Dally (1998) writes, until the mid-twentieth century, abnormal birth was considered a normal aspect of precarious life condition. Only with the discovery of the abnormal distribution of abnormal births and deaths, was it possible to detect chemically induced causes.

Since the time of Paracelsus, the wisdom of toxicology was that dosage determines the nature of a substance as a poison (“All substances are poisons; there is none which is not a poison. The right dose differentiates a poison and a remedy”). In the mid-twentieth century poisons of concern was starting to be not just the matter of dosage, but a matter of statistics. “There is no safe dosage for dioxins, as far as I can tell,” said a Canadian environmental scientist. But zero was becoming smaller and smaller with our enhanced ability to detect and measure smaller substances.

### ***Dosage, Statistics and Regulations***

The veteran toxicologists and medical scientists gathered in London on March 12, 2002 remembered well the dilemma posed by the advancement in the technology of chemical detection. At the roundtable, “Environmental Toxicology: Legacy of Silent Spring”, these scientists reminisced about the development of the discipline of environmental toxicology over the past four

decades.<sup>24</sup> Somehow many of the participants seemed to find ‘numeracy’ of the general public, or the lack thereof, particularly troublesome. In 1956, James Lovelock invented a device called the electron capture detector (ECD). This device was so sensitive to unpleasant chemicals, including organo-halogens (like DDT and dioxins), that it could detect these chemicals in the order of few femtograms (or  $\sim 10^{-15}$  g).<sup>25</sup> Suddenly it was possible to detect traces of chemical pesticides in natural environment even in as remote a region as Antarctica, and attach numbers to their existence. In 1956, therefore, the world was discovered to be full of potentially dangerous chemicals.<sup>26</sup>

The trouble was that none of the scientists quite knew what these numbers meant, but somehow for the politicians and the general public it meant something. In 1958, American Senator Thomas Delaney campaigned to institute a policy of zero-tolerance for carcinogenic substance in food additives. But “when you can measure femtograms, ‘zero’ becomes extremely small”, complained Lovelock. The presence of a small amount of toxic chemicals in the environment did not necessarily mean that they are harmful to humans and other animals. What was needed was the understanding of biological effects of these trace amount of chemicals, but the development in the knowledge of the biomarkers of damage lagged far behind the development in analytical technology that enabled them to ‘see’ the chemicals (and the situation had not changed greatly in 2002).

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<sup>24</sup> Woods in Christie and Tansey (2004: 17)

<sup>25</sup> Apparently this method cannot be used to measure dioxins in 2,4,5-T because there were too many chlorinated substance in the environment that it saturated the chamber too fast.

<sup>26</sup> in the 1970s, with the development of new technology to measure dioxins using High Resolution Gas Chromatography/Mass Spectroscopy (HRGC/MS) people suddenly became aware of the ubiquity of dioxins in our environment. This time, the argument was made that since it is ubiquitous, there was no need to worry about it.

The new type of poisons such as dioxins, however, was precisely the kind of things that gave us no respite even when the dosage was low. It was feared that there was no ‘threshold dosage’ below which no toxic effects were expected. Instead, the dose-response seemed to lie on a continuum of risks, where the *rate* of occurrence of diseases increased with the increased dosage (Neubert et al 1973). To detect the effects of this poisoning, one can only rely on the statistical pattern of occurrence of certain diseases.

Despite the absence of true known ‘safe dosage’, the policy makers had to decide on a standard for tolerance levels because these chemicals like pesticides had become such an important aspect of modern life.<sup>27</sup> What further complicated this task was the realisation that some of these toxic chemicals persisted in the environment, and accumulated in food chain. Since the publication of Rachel Carson’s *Silent Spring*, ecological latency and the environmental fate of toxic substance like benzene and DDT became salient in public consciousness.<sup>28</sup> The ubiquity of these toxic chemicals in the environment, on the other hand, led to two diverging responses.

In 1966, the US Department of Agriculture abolished the zero-tolerance standard for carcinogenic substance in food and began to establish tolerable dosage level of pesticides

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<sup>27</sup> Reports on the Secretary’s Commission on Pesticide and Environmental Health stated:

1. Chemicals, including pesticides used to increase food production, are of such importance in modern life that we must learn to live with them;
  2. In looking at their relative merits and hazards we must make individual judgements upon the value of each chemical, including the alternatives presented by the non-use of these chemicals. We must continue to accumulate scientific data about the effects of these chemicals on the total ecology; and
  3. the final decisions regarding the usage of these chemicals must be made by those governmental agencies with the statutory responsibilities for the public health and for pesticides registration.
- (1969 Reports on the Secretary’s Commission on Pesticide and Their Relationship to Environmental Health, Department of Health, Education and Welfare: Washington D.C. (ED 045 399) p. 3)

<sup>28</sup> Robert Smith reminisce that in 1959-60, when his professor Richard Williams wrote on the environmental fate of benzene, nobody was particularly interested in such a program. After the publication of Carson’s *Silent Spring*, the significance of such a research became widely acknowledged (Christie and Tansey 2004).

(Rushefsky 1982). This tolerance dosage was not the dosage below which the chemical substance became innocuous. Rather, it was a political decision based on a balance between the suspected risk of health effects, and the benefit brought by the chemicals to the society. How this standard should be decided would become an object of great debate throughout the 1970s with the establishment of the Environment Protection Agency.

### ***Chlorine War brought Home: EPA***

In August 1971, William Ruckelshaus, the administrator of newly established US Environmental Protection Agency (EPA), finally announced its decision to uphold their previous restriction on 2,4,5-T. This decision was made in contradiction to the report of its scientific advisory committee, which actually recommended the Agency to lift the ban (Wade 1971). When the US EPA was born in 1970, it inherited the responsibility to oversee the ban of the herbicide 2,4,5-T and the scientific advisory committee (known as 2,4,5-T committee) to review the regulation originally set up by the US Department of Agriculture (DA). Thus, it was put to its task by what will become one of the most contested regulatory decisions in its history.

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When the Presidents' scientific advisor Lee DuBridge made an announcement in October 1969 to cancel the use of 2,4,5-T both in Vietnam and domestically, neither the Department of Defence nor the Department of Agriculture took immediate action (ibid.). Not surprisingly, the source of this hold-up was Dow Chemical. Dow scientists like V.K. Rowe and J. L. Emerson challenged the Bionetics study by arguing that the sample of 2,4,5-T used in their study was highly



contaminated with dioxins. Since 1965, Dow Chemical had established a production standard requiring dioxin contamination of 2,4,5-T to be below one part per million. The sample used by Bionetics Laboratory, on the other hand, contained dioxin of approximately 27 ppm.

The question at hand was which one of these two chemicals—2,4,5-T or dioxin—were to be blamed for producing “higher than normal rates of birth defects in test animals treated with massive doses of 2,4,5-T” (Sparshu et al 1971).<sup>29</sup> Dow scientists, therefore, repeated the Bionetics study using their own commercial grade 2,4,5-T from Dow, which contained less than 1 ppm dioxin contaminant. The result showed that this sample of 2,4,5-T produced no birth anomaly to take note of. This was an indication, according to Dow scientists, that there was no reason for cancelling the registration of 2,4,5-T as long as one could keep the dioxin contamination under control.

This manoeuvre, however, bought the chemical manufacturers only about half a year before the Department of Agriculture would make its first step to regulate the use and sales of 2,4,5-T. Acknowledging the fact that the Bionetics Study had used 2,4,5-T with relatively high dioxin contamination, Diane Courtney and her colleagues (1971) at National Institute of Environmental Health Sciences (NIEHS) conducted further experiments (Courtney et al 1970). This time, their result showed that 2,4,5-T alone, as well as TCDD dioxin produced birth deformities in mice (Courtney and Moore 1971). Upon receiving the result of this study, on April 15th, 1970, the Department of Agriculture finally announced the suspension of the registration of liquid form of

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<sup>29</sup> Dow Aides deny herbicide risk, The New York Times, March 18, 1970,

2,4,5-T for domestic market, making its inter-state sales illegal, and banning its use around food crops, homes and water areas. Foremost in their mind was the fear that 2,4,5-T posed an “imminent danger” to women of child-bearing age.<sup>30</sup>

This was not the end of the struggle over 2,4,5-T, however. Because this ban did not affect the use of 2,4,5-T on pasture, range, forest, rights-of-way and other non-agricultural land, environmentalist and consumer groups filed a petition, arguing that the restriction was too limited.<sup>31</sup> On the other hand, two of the chemical manufacturers, Dow Chemical and Hercules Incorporated petitioned for a review by a scientific advisory committee, arguing that the evidence against 2,4,5-T was insufficient. Further studies were needed to ascertain just how toxic it is to humans at the dosage they are likely to be exposed. Meanwhile, the ban on 2,4,5-T was once again put on hold.

In 1971, the scientific advisory committee named ‘2,4,5-T committee’ which consisted of scientists from government agencies, industry and academia came to a conclusion that the circumstantial evidence on the human toxicity of 2,4,5-T was not sufficient to warrant its restriction. At some dosage, both 2,4,5-T and its contaminant TCDD dioxin were admittedly toxic. But the accumulation of 2,4,5-T to such a level was “highly unlikely”, because it degraded

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<sup>30</sup> US curbs sales of a weed killer: also suspends 2,4,5-T use as defoliant in Vietnam. The New York Times April 16, 1970

<sup>31</sup> There was also the question of 2,4-D, which was the most widely used herbicide in the United States. Some scientists expressed concerns about similar health hazard comparable to 2,4,5-T. A test by Food and Drug Administration indicated that 2,4-D also caused birth defects in chicks. The myth of non-poisonous herbicides was crumbling fast. Surgeon General of the United States Public Health Service, Dr. Jesse Steinfeld countered that this study on 2,4-D was as yet replicated. But scientists like Thomas Whiteside argued that even if the test results are not conclusive, 2,4-D should be banned until it could be shown that it was not harmful to humans. (Surgeon General Defends Herbicides. New York Times Jun 19, 1970.)

rapidly.<sup>32</sup> Dioxin degenerated more slowly, but the committee believed that modern technology can reduce this impurity to level low enough to produce no toxic effects. Much of the toxicity attributed to 2,4,5-T in the past “now appears” to come from its TCDD contaminant. But 2,4,5-T containing less than 1 ppm of TCDD has “relatively low toxicity.” Especially regarding its teratogenic nature, many of the available evidence suggested that it was not so much the 2,4,5-T itself, but its contaminant TCDD dioxin that caused birth deformities.

Studies on laboratory animals have found that 2,4,5-T administered below the dosage of 40 mg/kg/day of maternal weight showed no adverse effects on the fetus. TCDD, on the other hand, was shown to have teratogenic potential above 0.001 mg, but “this dosage level is virtually impossible with currently produced 2,4,5-T.”<sup>33</sup> The report also considered evidence of human reproductive effects of 2,4,5-T exposure from clinical cases in Sweden, Vietnam and Arizona, but it deemed outright that the birth records used, for example, in Vietnam studies were “not trustworthy.” Moreover, while one of the Vietnam studies reported increased cases of spina bifida and cleft palate, overall, these studies did not reveal “any marked increase in incidents of birth defects or a striking defect such as that produced by thalidomide”.<sup>34</sup> At least at the level of contamination at which the industry was now able to produce 2,4,5-T, the Committee assumed, it was unlikely to pose any significant health risk on the general population. Weighed against the benefit the use of 2,4,5-T brought to the society, the Committee concluded that the US EPA should

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<sup>32</sup> 2,4,5-T advisory report, p. 64

<sup>33</sup> Ibid., p 65.

<sup>34</sup> Ibid., p 58.

resume the registration of 2,4,5-T with the specification of TCDD contaminant level to be below 0.1 ppm.

This report, however, was accompanied by a minority report submitted by some of the dissenting members of the committee. The disagreements largely came from different interpretations of uncertainty. The minority report argued that 2,4,5-T committee failed to consider long term effects of low dose exposure to 2,4,5-T and TCDD dioxins. None of the studies reviewed were sophisticated enough or had large enough sample size to be sensitive to increased risk of congenital defects at low dosage. The Committee, however, assumed that there will be no adverse effects below certain dosage.<sup>35</sup>

Wilful ignorance was a persistent feature of scepticism about the reproductive effects of TCDD. 2,4,5-T Committee also failed to consider the environmental fate of the chemicals in the food chain, and displayed unjustified confidence that the Vietnam birth records do not show increase in birth defects. Based on these observations, the minority report recommended cancellation of 2,4,5-T around home, recreational areas and near food crops. It was these minority reports that led the EPA to question its own scientific advisory committee's advice (Wade 1971).<sup>36</sup>

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<sup>35</sup> There were also several other substantial problems with the 2,4,5-T committee. Following the study of NIEHS, Hercules Incorporated commissioned a research by the Bionetics Research Laboratory to replicate the study by NIEHS. Hercules informed the committee that Bionetics could not confirm the result of the NIEHS study. However, when this result was put out for external review, it was found that Bionetics Laboratory had made an error in the dosage. When they redid the study, they came up with the same result as NIEHS. Somehow, 2,4,5-T committee fails to mention this detail in its review. Was the Committee biased? Possibly. A reporter for journal Science, Nicolas Wade questions the neutrality of 2,4,5-T committee which included the scientists from Monsanto and Dow.

<sup>36</sup> As the newly appointed EPA administrator, Ruckelshaus brought a new culture to the regulatory agencies. The old protocol of the agencies like USDA and FDA was to suppress these advisory reports. The new Agency instituted a policy to make the advisory reports public as soon as they were available. External opinions were solicited, and the independent scientists joined the member of the committee who contributed a minority report. However, in the long run, this standard of transparency would place a tremendous strain on its regulatory practice.

The decision of the EPA in 1971 was not the end of its crusade to regulate 2,4,5-T, as Dow Chemical brought their appeal to court and gained injunction against the EPA. For the rest of the 1970s, the regulation of 2,4,5-T swings back and forth like a pendulum, involving court injunctions, public hearing, rebuttals and recriminations until in 1979, when the chemical was finally banned for good.<sup>37</sup>

### ***Dioxin Fiasco***

Since the 1970s, the regulation of 2,4,5-T and risk assessment of dioxins became “a battleground of opposing philosophies about the relationship between technological risk and human safety”.<sup>38</sup> Ranged on one side were the chemical industry and industrial scientists such as “the classical toxicologists, food technologists and agro-chemical engineers, who are trained to look for short term effects of pesticides”; on the other were environmentalists and academic scientists “typically the microbiologists and geneticists, the specialists in the causes of cancer, birth defects and mutations, who are concerned with the long term effects of chemical contaminants on human health.” Scientists on both camps understood that there was uncertainty regarding the human toxicity of these chemicals; what differentiated their conclusions was their attitude toward risk and benefit in the context of uncertainty. Since these chemicals purportedly

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<sup>37</sup> By 1973, the use of 2,4,5-T was restricted to rice, range land and rights of way. In 1974, public hearing was held to further assess the necessity of regulating these uses. However, in the same year, the EPA withdrew its legal motion seeking the cancellation of 2,4,5-T when it was discovered that the analytical methods they had been using to measure its TCDD contaminant was unreliable. This represented, argues Boyce Rensberger (1974), a “fundamental policy change that shifts the burden of proof from the manufacturer to the Government” agencies to prove the harmfulness of the toxic substance. (“EPA Ends drive to ban defoliant.” New York Times. Jun 27, 1974). In 1979, study showing increased rate of miscarriage among forestry workers’ wives in Oregon propelled the ban on 2,4,5-T (Smith, Jeffrey. 1979. “EPA Halts Most Use of Herbicide 2,4,5-T”, Science vol 203, 16 March 1979

<sup>38</sup> Harrison Wellford cited in Wade (1971). See also Wade (1972).

have benefits to the society, exercising ‘precautionary principle’ at any cost was not desirable for some people (Newton and Norris 1970). Others found it the only sensible decision to halt the use of these chemicals until their safety was demonstrated (Galston 1970).

But was this a feasible goal? The industry was releasing thousands of “unwanted and even unidentified substances” each year (Abelson 1970). It was the fate of these unknown risks the (“*strangers* discarded into rivers, lakes and the sea”) that people were beginning to perceive around them. As Philip Abelson (1970) asked, “how do we cope with other possible dioxins? To what extent are such substances finding their way into humans?” Dioxin was certainly toxic—but at what dosage? The controversy over dioxin became the question of tolerable dosage. And the standard of accepted dosage, in turn, would increasingly be spoken in relation to the molecular mechanism through which dioxin produced its toxic effects.

Toward the late 1980s, there was a great anticipation that the increasing influence of molecular biology in toxicology would lead to a revision of risk assessment (Marshall 1993). Industrial executives, in particular, hoped that it would lead to a reduction of public fears about chemical products. For other chemicals such as 2,4-D, a component of Agent Orange as well as a garden herbicide, the effect was its exact opposite. The new molecular studies showed that peroxisome proliferators (the category of chemicals 2,4-D belonged to) was far more toxic than they were thought to be before. Chemicals like dioxin, on the other hand, looked less of a threat to humans than previously thought, and some scientists considered dioxin as a test case for the new approach to risk analysis.

In February 1990, a furor erupted when the participants of Banbury Meeting held in October the year previous, learnt that their ‘consensus’ was fabricated and usurped by a few minorities among the organizers of the meeting (Roberts 1991 a). In October 1990, the Chlorine Institute and the US EPA co-sponsored a scientific meeting entitled “Biological Basis for Risk Assessment of Dioxin and Related Compounds” at Banbury Centre at Cold Spring Harbour. The scientists gathered there generally agreed that currently known toxic effects of dioxin was mediated by intra-membrane protein called aryl-hydrocarbon receptor (Ah receptor) (Roberts 1991 a/b). This was a two-decades-old hypothesis that went back to the study by Alan Poland and his colleagues (1972) in the 1970s. Once dioxin binds to Ah-receptor, it sets off a cascade of reactions in the cell like that initiated by estrogens. This mechanism played an important role in dioxins’ carcinogenic effects and other effects.<sup>39</sup> This much, few objected. But the conclusion some participants drew from this—that receptor mediation implied threshold for pathological effects—was controversial. What led to the whole fiasco was that the public relations firm associated with the Chlorine Institute went to the Press claiming that formal consensus was reached among the participants on threshold theory.<sup>40</sup>

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<sup>39</sup> Most scientists believe that Ah-receptor is also involved in the carcinogenesis and teratogenesis in human, because Ah receptor is thought to be “highly conserved in evolutionary sense” and functions in a similar manner in different animals (Kogevinas et al. 1997). In recent years, Ah receptors have been isolated from human cells in the studies of dioxin toxicity in human tissues (Akhtar et al 2004). These studies showed similar sensitivity to dioxin in both experimental animals and humans with regard to enzyme induction, chloracne, immunotoxicity, developmental toxicity and cancer, offering additional support to this translation (ibid.). Scientists speculate that Ah receptor affects gene expression and regulatory proteins, but the precise mechanism leading to cancers and other health effects is still unknown (Schechter 2006a, Silbergeld and deFur 1994). In a recently published study Ohtake et al (Harper 2007) claimed to have discovered the mechanisms through which dioxin bound to Ah receptor affects oestrogen-dependent gene transcriptions.

<sup>40</sup> The conspiratorial tone of the whole event was perhaps furthered by another scandal involving the chemical industry. In 1990, the US Environmental Protection Agency launched a criminal investigation on Monsanto Corporation, on

But aside from the manner in which the ‘consensus’ was fabricated, the controversy touched upon a fundamental question of dioxin science. The Ah-receptor hypothesis, some argued, implied that it takes a certain number of dioxin molecules to fill a sufficient portion of receptors to “shift toxic process into high gear” (Marshall 1993). If the binding to receptor is an essential step for dioxin to produce its toxic effects, it implies that there is a ‘safe’ dosage or practical ‘threshold’ dosage below which one can expect to see no toxic effects. Then, some argued, the standard for acceptable intake dosage has been overestimated up till now.<sup>41</sup>

Those who objected to this assessment (including Alan Poland, who came up with Ah-receptor hypothesis) cautioned that mechanisms other than receptor-mediated effects may yet to be discovered (Roberts 1991), and that no one knows exactly how many Ah receptors have to be activated before its toxic process is initiated (Marshall 1993). Once again, the question was about how to deal with uncertainty.

One thing this meeting set stage for was a reassessment of risk of dioxin, not one based on the study on laboratory animals, but one based on the understanding of biological mechanism

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whether it had falsified three epidemiological studies of its workers. Monsanto study, which became the basis of the Australian Evatt Commission report that informed Judge Weinstein’s opinion, had concluded that there were no health risks from dioxin exposure other than chloracne (Hardell et al 2004) discovered that Australian Evatt Commission report was almost verbatim copy of Monsanto study without citing this source). After reviewing the study, however, Cate Jenkins, a chemist for US EPA discovered that some of the participants of Monsanto study were misclassified, and two of the patients with cancer who were exposed to dioxin were completely omitted. The criminal investigation was abandoned due to the lobby by Monsanto. EPA argued that since their regulation was not based on Monsanto studies anyway, there was no reason to continue with the investigation.

<sup>41</sup> In animal experiments, dioxin has been shown to be both carcinogenic and teratogenic, but only slightly genotoxic (Poland and Knutson 1982). It has also been shown that dioxin has ‘wildcard effects’ on animals, inducing cancers at multiple sites. Thus in carcinogenesis, dioxin is thought to act more as a promoter than as an initiator. These insights also led some to argue that linear multistage model (LMS) used by EPA was not appropriate. Until then, the US EPA had been using a linear dose-response model, which was modeled after the effects of radiation. If threshold model is adopted, it might mean that the tolerable dioxin level set by US EPA which was between 0.006 pg/g was far too conservative.



through which dioxin produced its toxic effects.

### ***Conclusion: Endangered Species***

Unlike the moral condemnation of poisoning of the previous age, the statistical risk posed by poison of our age led to a bifurcated response. Risk-benefit comparison involves a comparison of incommensurable factors.<sup>42</sup> In case of Agent Orange in the 1960s, this comparison was between the chance of immediate survival of American soldiers which was supposed to be increased by the use of the chemicals, versus long term hazards of chemicals on the health and the living environment of the Vietnamese. Once the war in Vietnam was over, and the struggle over 2,4,5-T was brought home to the United States, this same question became the issue between the economic benefit of using 2,4,5-T for the chemical industry and for agriculture and forestry versus long term health and the survival of American people.

In the 1960s, just as the US military was spraying the Vietnamese forest with chemicals, the idea of poison and the field of toxicology was going through a small transition. Poison was no longer conceived as something that affected only individuals, but something that threatened a population as a whole, or even the survival and the fitness of the entire specie.

This was likely why ‘teratogenicity’ in particular was such a taboo topic for Dow chemical and their advocates. As one member of 2,4,5-T advisory Committee<sup>43</sup> concluded its discussion on

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<sup>42</sup> Risk assessors gathered in Danang and POP Workshop organized by Hatfield consultant in July 2009 expressed their ambivalence of having to put monetary value on human life and disability in order to compare with the cost of regulation or remediation.

<sup>43</sup> A Committee commissioned by US Environmental Protection Agency in order to assess the scientific evidence about the toxicity of 2,4,5-T.

reproductive effects of Agent Orange that “any attempt to relate birth defects or still-births to herbicide exposures is predestined to failure”, reproductive effects of the chemicals elicited irrational response from a certain sectors of the industry and the scientific community.<sup>44</sup> Some representatives of chemical industry even tried to redefine the word “teratogenicity”, narrowing its scope to include only embryotoxicity that “seriously interferes with normal development or survival of the offspring,” in order to counter the claim that 2,4,5-T was teratogenic (Wade 1972).

In the 1970s, the air of ‘doom and gloom’ pervaded the discourse of environmentalism (Nelson 1971).<sup>45</sup> The environmental discourse of the time reflected the fear that they may be poisoning their own future. In particular, the sterility of the population and the gradual decline of general health caused by the toxic substance released by the industry fed the imagination of dystopia (later minted as ‘Risk Society’ by Ulrich Beck (1992)). As one of the Governmental environmentalist, Senator Edmund Muskie said, “man has joined the list of endangered species” (Nelson 1971).

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<sup>44</sup> Harrison Wellford cited in Wade (1971). See also Wade (1972). Dow chemists wanted to count as teratogenic effects only such deformities “seriously interferes with normal development or survival of the offspring”

<sup>45</sup> Bryce Nelson, 1971. On the Planet Polluto. The New York Times Apr 25, 1971.

## POSTSCRIPT TO PART II

In *VAVA v Dow (2004)*, the Vietnamese plaintiffs had to work with a set of international laws that worked with the notion of poison understood in the pre-1960s paradigm; that is, poison that behaved according to Paracelsus' doctrine and produced its effect within the time-span of the battle. But Agent Orange was a poison only insofar as it is understood in the post-1970s paradigm, which was more in the realm of risk regulation and civil litigation than war crimes and criminal suit.

In response to the plaintiffs' allegations that the defendants intended to poison the Vietnamese, the attorneys of the chemical manufacturers like Dow and Monsanto argued that:

intent is inherent in the concepts of treachery, perfidy, and calculation. One cannot be negligently treacherous or perfidious. And a weapon is only "*calculated* to cause unnecessary suffering" if it is intentionally designed or used for that purpose. Indeed, causing unintended injuries that become manifest only years, and possibly decades, after a conflict ends is not a method of combat at all. Such long-term latent side-effects, by their very nature, are not means of 'achiev[ing] military objectives' (Defendants' brief p. 43).

Chemical industry releases poisonous substance into the world each day through their commercial products like pesticides and herbicides, but they do so without an inkling of guilt of intentional poisoning. No matter how terrible such negligence may be, it is a bit of a stretch to argue that such peacetime practices are equivalent to war crimes.

In sum, the defendants' response to the plaintiffs' allegations was typical of the multi-nationals in litigations: avoid engagement with factual allegations and moral questions (which might damage their corporate image) and stick to the legal technicality. Confident that the

law was on their side, even if justice was not, they pulled out a gamut of legal gadgets like ‘government contractor defence’, ‘statute of limitations’, and the specificity requirement of Alien Tort Statute and International Law and so on—and they prevailed.<sup>46</sup>

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In 1992, under a Congressional decree, Institute of Medicine established a Veteran’s Agent Orange (VAO) Committee. Since 1994, this committee has been publishing biennial reports compiling existing scientific literature relevant to its appraisal. In the most recent update published in 2009, the committee concluded that there was ‘sufficient evidence of association’ between Agent Orange exposure and five diseases (soft-tissue sarcoma, Non-Hodgkin’s lymphoma, chronic lymphocytic lymphoma, Hodgkin’s disease and Chloracne); ‘limited or suggestive evidence of association’ for twelve disease categories; a few dozens of diseases with ‘insufficient evidence of association’; and ‘suggestive evidence of No association’ for spontaneous abortion after paternal exposure (see Appendix 1).

Since 1992, the Veterans’ Administration (VA) has been providing disability compensation, health benefit, and health examinations for Agent Orange related disabilities. Diseases covered by VA are those listed for ‘sufficient evidence’ and ‘suggestive evidence’. Exposure to Agent Orange

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<sup>46</sup> The plaintiffs, however, did gain some ground by laying out the incriminating evidence about the defendants in public (as a title to an article on national daily *Thanh Nien* in 2009 went: “Chemical companies, US authorities knew dangers of Agent Orange.”) That the manufacturers had some knowledge of the toxic nature of these chemicals was hardly a new discovery, I imagine. But this new information, which purportedly came from a declassified internal document of Dow Chemical, admitting that they knew of dioxin contamination of 2,4,5-T and tried to deal with this problem internally without notifying the government, was a good propaganda material (Cry for Justice: Chemical companies, US authorities knew dangers of Agent Orange, *Thanh Nien News*, August 10, 2009). Dow and the other defendants may be judged innocent under law; but they were factually and morally guilty in the eyes of the concerned public.

is presumed as long as they had served on land in Vietnam during the War.<sup>47</sup>

Although neither the report by Institute of Medicine nor the Veteran's Administration's compensation program is meant as a verdict on scientific evidence on the causal link between Agent Orange exposure and various diseases, the Vietnamese organizations like VAVA often take them as the authority that affirmed their claim about the harmful effects of Agent Orange exposure in Vietnam. Given this double standard of the United States government and the apparent certainty of the health consequences of Agent Orange in Vietnam, the continual denial of the US government and the industry to compensate the victims of Agent Orange in Vietnam on the account of insufficiency of scientific evidence appeared like a poor excuse.

But was the consequence of Agent Orange so conspicuous in Vietnam? What was the perceptible reality of the consequence of Agent Orange in places like A Luoi valley in rural Central Vietnam?

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<sup>47</sup> Dioxin sceptics, such as Michael Gough, have been arguing that this compensation program by Veterans' Administration is a political accommodation rather than a verdict on scientific evidence. According to Gough, IOM advisory committee that has been producing biannual reports is also of suspicious value since the committee members are not very knowledgeable about the issue (because it excluded anybody with conflict of interests; i.e. industrial scientists or academic scientists with funding from chemical industry).

— PART III —  
KNOWLEDGE

It was still early in my fieldwork, barely a month after I arrived in Hue. My friend, Huynh, who worked at the Institute of Culture, took me to a place called ‘Peace Village,’ located just past the Cathedral up on a small hill across the canal at the southern end of Hue City.

There was very little human activity at Peace Village when we arrived there. The tranquility surprised me. Huynh, who went separate way, miraculously arrived at the same time as my research assistant Giang and I did, and wondered aloud where we should park our mopeds. It was only March still, but the afternoon sun was already insistent. The air was still and stifling.

They had built this centre with the money donated by a German foundation in the mid-1990s. Since then the facility has been handed over to the Vietnamese, and it has been run under the Department of Health in Hue for almost thirteen years. It was built barely fifteen years ago, but it looked as if the buildings had been standing there for many decades. The paint on the walls of the buildings was weathered and fading. Weeds seemed to grow in every crack of the pavement exposed to the sun in the courtyard.

As we walked up the stairs to see the management on the second floor, there was an elderly Caucasian woman walking down the stairs. Peace Village was one of the centres that serviced Agent Orange victims. And this fact alone attracted many foreign donors and volunteers. The issue of Agent Orange was a hot topic that attracted many foreigners in 2008. It was here at Peace Village that I heard a strange rumour about the ethnic minorities living in A Luoi Valley.

The clerk who received us informed us that the director was absent and that we should return on another occasion, but Huynh somehow pulled him into a discussion with his usual charisma and gabbiness. There were gossips, hearsays and speculations in what they saw and heard. They chatted along casually: a story of a woman who had five miscarriages, or a story of a local reporter whose child had stayed at the Peace Village at one point, but kept this fact hidden. Nowadays, any type of birth defects was automatically associated with Agent Orange, which meant that any defects of a family member could be taken as the sign that the family was contaminated. Dr. Le Cao Dai, who spearheaded the Agent Orange movement in Vietnam, believed that the power of science would bring light to the obscurity of superstition, expelling the myth of ancestral sin as the cause of birth defects, vindicating family honour in the eyes of the community. The stigma of dishonour, however, was now replaced by the stigma of poison in places like Hue City.

The purpose of the centre was the rehabilitation of the children with disabilities. Many of them were thought to be affected by Agent Orange, but there was never certainty in this, the clerk added. The children admitted there were all under the age of eight. Anyone from any province could come there; at any given time, there were about forty children there.

Suddenly, as I was desperately trying to follow their conversation, the words ‘immunity, ‘ethnic people’ and ‘dioxin’ caught my attention.

“*Miễn dịch* [immunity]?”

I muttered like a fool trying to string together words I recognized to make sense of what I was hearing. Sensing that they have lost me, Huynh turned to me and explained to me in slower and simpler Vietnamese: “He says that the ethnic people in the mountains have gotten used to dioxin,

so that they are rarely affected by it. In places like A Luoi valley, he said, most damages are seen among the Kinh people. Isn't that incredible?"

It is probably not so difficult for you to imagine how hard I fought not to raise my eyebrows. *People immune to dioxins?* Hardly believable. But as a good anthropologist, I kept my scepticism at bay. Huynh, on the other hand, was visibly intrigued. He was convinced that I should investigate the veracity of this fantastic(al) story, and sceptical as I was, I told him that I would follow his advice.

In the next a month or so, this question of the ethnic people's resistance to dioxin became my small personal curiosity. I brought it up in several interviews with scientists like an afterthought near the end of the interviews. Dr. Khai, who had conducted research on Agent Orange in A Luoi as a member of 10-80 Committee, for example, laughed at the entire notion, and told me not to take such a claim too seriously. There were no statistics on how dioxin has affected different ethnic groups differently, he said, and no study looked at the correlation between ethnicity and diseases thought to be linked to Agent Orange.

Ethnic people of the highlands have acquired resistance to certain diseases like malaria and other communicable diseases. Maybe they think that because they have immunity against other diseases, the highland people have immunity against dioxin too. This is just ordinary people's guess. They probably cannot tell these communicable diseases apart from the effects of dioxins. The thing about dioxin is that not all people exposed to the toxin become ill.

My research assistant, Giang, who sat looking unimpressed as usual while Huynh talked with the clerk at Peace Village, had another explanation for why it appeared as though there were fewer Agent Orange victims among the ethnic minorities. Among the hilltribes of A Luoi, he said, there was a custom to let the babies born with abnormalities die; even perfectly healthy twin babies were killed in the past, just for the fact that they were twins. Selective infanticide meant less surviving



children with birth defects. Because birth defects are the most visible effects of Agent Orange, as known today, this practice would give the appearance of a reduced number of victims.<sup>1</sup>

Perhaps, the rumour that the ethnic minorities have developed resistance to dioxin was a way for the lowland Kinh people to objectify the otherness of the ethnic minorities. Cultural differences could sometimes be expressed in racialized discourse in terms of physiological differences. Was this just an example of such a racist psychology? In Hue City, there were many exoticised and sexualised rumours and jokes circulating about the ethnic people of A Luoi. Often involving poisons and charms, these stories fed the fantasy of lowland Kinh people with stories of exotic native seductresses, who would ensnare foreign men from the lowlands who wandered unwittingly into their territory with their magic.

Dr. Minh, who had recently completed an epidemiological study on dioxin in A Luoi for his doctoral dissertation, on the other hand, had a different story. He seemed to admit that there was a *certain* truth to this observation about the differences between Kinh people and the ethnic minorities in A Luoi. But he added cryptically: “You should go there and find out about it yourself.” Now I had a project to explore when I got to A Luoi.

What is the reality of Agent Orange poisoning in the A Luoi valley? Statistically, of all regions of Thua Thien Hue province, A Luoi district has the highest number of people thought to be affected by Agent Orange. According to one figure, over 5,000 individuals, almost one eighth

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<sup>1</sup> Dr. Le Cao Dai, who was one of the most vocal Vietnamese physicians to politicize the issue of Agent Orange, wrote before his death that in rural Vietnam, birth defects were seen as some kind of karma, a punishment for past misdeeds or sin of their ancestors. (Le Cao Dai (2000), *Agent Orange in the Vietnam War: History and Consequences*, (translated by Fox, AN) Hanoi: Vietnam Red Cross Society.) Wider publicity and dissemination of scientific knowledge about Agent Orange, he argued, would allow the rural people to overcome such superstitious beliefs and the stigma that it attaches to the victims themselves. Whatever the outcome of this campaign, as far as I could tell, Dr. Dai was writing about Kinh people; there was no guarantee that the ethnic minorities like Taoi, Paco and Katu of A Luoi valley also held similar beliefs.

of the population of A Luoi, were affected by dioxins in one way or another.<sup>2</sup> Then why did the clerk at Peace Village say that the ethnic minorities of A Luoi have ‘resistance’ to Agent Orange? What historical, cultural, socio-economic and epistemic factors make the effects of Agent Orange on ethnic minorities visible or invisible?

To put it crudely: to become a victim of Agent Orange is to embrace the etiological explanation that links one’s suffering to the poison sprayed in the past. How do people understand this distant link between poison and their diseases and disabilities? Was it a *perceptible* reality, or was it only a *statistical* reality that became visible only through scientific methods? And if latter, how does this statistical reality, in turn, become perceptible?

The number of people who suffer from this poison; the number of people exposed to it; and the extent of its health effects: these figures that represented the health consequences of Agent Orange were all connected with the imagination of belonging and access to resources (see Chapter 2). This almost mystical rumour of immunity of ethnic minorities in A Luoi seemed likely to be entangled with these political and economic factors; but we also need to pay attention to the local reality that gave this discourse its plausibility.

In Part III, I explore how the people of A Luoi have understood and perceived the risk and illnesses associated with the toxic effects of Agent Orange in their memory. How are the toxic effects of Agent Orange known both by laypeople in A Luoi and by the experts? How does this translate into the idea of risk and victim identity?

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<sup>2</sup> I obtained these statistics at the Red Cross in Hue city. I saw similar documents in Quang Ngai and Danang, likely coming from the same survey. However, what these statistics showed was not entirely clear. It was captioned that they were numbers of people ‘*nghi nhiem*’ or suspected to be contaminated with dioxins. But it was not clear if this meant people who had symptoms related to Agent Orange or people who lived in a region that was contaminated, or people who were exposed to the herbicides during the war. When I asked different scientists and government officials for explanation, many of them told me that these statistics are not very accurate.

In Chapter 7, I discuss the issue of knowledge about the toxic effects of Agent Orange. What did people of A Luoi ‘know’ about Agent Orange? What epistemic factors influenced this knowledge? And what cultural-historical factors obscured this knowledge in places like A Luoi Valley?

In the meantime, the health effects of dioxin and Agent Orange was debated under its own logic in industrialised countries (especially in the United States). The development of scientific discourse in the international arena was relevant to defining the scope of Agent Orange poisoning in Vietnam, but it did not map onto the reality of Vietnam completely. In the late 1990s, a group of Canadian scientists discovered high level of dioxins left in the former sites of the US airbases in A Luoi valley. For the first time since the war, people came to know that they had been living in a contaminated environment. In chapter 8 and chapter 9, I explore how this new knowledge of risk has affected the people of A Luoi, their practices and outlook toward their land.

*Poison People Did Not Know*

“Here, just under here,” said Kim and swept her bare foot over the damp soil just below a pomelo tree. It had stopped raining and the wind felt cool and fresh in the mid-afternoon sun that now shined through the parting clouds. There was always wind in the valley, it seemed. In the sunny afternoons in the winter, the Ho Chi Minh road would be lined with colourful blankets of red, yellow, orange and purple fluttering in the air to be dried of dampness it gathered in winter gloom. In the summer, you would often encounter a group of dragonflies losing its balance in gusts of wind.

Right beside the spot Kim indicated with her foot, there was a chicken coop, all empty except for a rubber boot which lay on its side like an evidence of a forgotten act of prank. There was no stone or a sign to mark the spot where the baby was buried. Nothing to remember by, the baby which had never quite become a human: the baby, whose spirit was never allowed to join those of its ancestors. Only those who asked Kim directly knew where it was buried because only she knew where it was. She gave birth to it alone. Buried it alone. And remembered it alone—or almost so.

“Nobody else knows about this spot,” she said. Then corrected herself. “My family knows. Some of them, at least. But others, no. It was only as big as a cellular phone.”

Even then, when they appeared in her dream, she saw two children. Two handsome, beautiful children: one she never named, and one she named Lu and later called *Dal*. “*Dal* for anus-less in Katu”, she said and chuckled. Neither of them was in this world any longer. But they both called her ‘Mom’ in her dream, and told her not to cross the fence that separated them. Told

her to stay on her side and live.

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“Nine months and ten days... still like a lump of meat. Then died,” Kim began haltingly, occasionally casting a glance toward her brother Duc, who was my local research assistant. “It came after my first son that didn’t have anus... after carrying for nine months and ten days. No legs, no arms. Couldn’t tell if it was a boy or a girl either. Just a lump of flesh....I realised much later when I saw the same thing on television that it was what they call ‘*quái thai*’.<sup>1</sup> But I didn’t know what it was at the time. I found out about this after I worked with the World Vision project here. That was the year 2000.”

Around the turn of this century, many projects were implemented in this region by both the government and foreign aid organizations. At first, they were mostly related to economic development, like the one project by a Japanese organization in the neighbouring Dong Son commune. They built roads and donated cattle, each year returning with new members and more resources. “They ate, danced, sang and worked together with the locals. And when they left, they hugged and cried with the local people,” Mr. Dung, the local Party leader recounted the experience fondly. But they left Dong Son, when it became known that the area was heavily contaminated with dioxins. They never returned after that.

Then came a wave of projects related to Agent Orange. The World Vision project which started in 2002 organized training sessions on the health effects of the chemicals. They even had some funding to give orthopaedic surgery to children thought to be affected by Agent Orange. “They talked about health an awful lot,” said Kim. “But they also helped some students to go to

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<sup>1</sup> Literally means ‘monster birth’. Refers to severe case of birth defects.

school. There were training sessions on women's health and reproductive health, as well."

Most foreign funded projects in the valley were now over. They said it was because the standard of living in the area has been 'lifted.' Now, there was a new high school between Dong Son commune and Huong Lam commune where she lived. The Ho Chi Minh route had also been repaved just recently. Each household had electricity, at least most of the time. Running water was available, often enough. Many families had a television and a Honda (or a motorcycle), and there was enough food to feed, more or less everyone. The sun shined bright like there was no place for miseries and secrets.

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Located at the southern end of Huong Lam commune, Lien Hiep village where Kim lived was the last village in Huong Lam commune to return after the war.<sup>2</sup> It was resettled by an assortment of people originally from different clans. Kim, for example, was from A So clan comprising of Katu people. There were also people from Ba Lach, Ka Non, and even people originally from the neighbouring A Roang commune. Settlement clustered along the Ho Chi Minh road that ran through the length of the valley, which became hillier and narrower around Lien Hiep. But it was still better than where people of Dong Son commune were resettled in the 1990s.

"When the people of Dong Son commune came to live in the land beside ours under the new economic program, they did not know about the chemicals that existed in their land," said Dr. Phuong, a medical doctor who lived in A So village. The original inhabitants of Huong Lam had witnessed that something was wrong with the land that lay just west of their settlement. But that did not stop them from entering that land, where there used to be an American airbase during the

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<sup>2</sup> The province (*tỉnh*) is divided into districts (*huyện*); a district is divided into communes (*xã*) and district centre (*thị trấn*); and a commune is divided into villages (*thôn*). Often in this part, each village corresponds to old clan, which largely comprised of people belonging to the same ethnic group. Now it is more mixed up.

war. Old bomb craters with fish floating with their bellies up; foul smells in times of sunshower which made the air hard to breathe. People often recalled situations like this. Scientifically speaking, dioxin is supposed to be odourless, but people still smelled it nonetheless—as if it was necessary for them to associate some form of sensory perception to pin down the presence of this toxic chemical, which they now knew existed all around them.

“We didn’t know anything!” Dr. Phuong said. “We didn’t eat those fish that were sick, but we saw many of them, and thought nothing of it. Some people may have suspected something, especially in terms of deformed babies. Lots of people complained of pains. They probably suspected the land they were on. There were lots of unexploded bombs around here.” But the toxic effects of dioxins, “people cannot know,” she insisted. “People didn’t know anything about the chemicals until the project of the Canadians began. So before 1999, people didn’t know.”

### ***Discovery of Dioxins***

The Canadian scientists from Hatfield Consultants came upon A Luoi through the recommendation of Vietnamese scientists who suspected the likelihood of finding high concentration of dioxins there. Several years after the initial research at A Luoi was completed, a senior member of the 10-80 Committee noted, “Do you know why we recommended you to do your research in A Luoi? It was because this is an area which has a number of war heroes, and we knew there would be a strong support for conducting research in A Luoi.”

The contributions and the sacrifices made by the ethnic tribes of A Luoi during the war were well known. If they could show that these people were heavily contaminated by dioxins from the war, they may be able to obtain some support, the Vietnamese scientists hoped. Officially, however, A Luoi was chosen as their first test site because its remoteness and relatively

underdeveloped agriculture ensured that there were few other sources of dioxins to confound their research (Hatfield 2000).<sup>3</sup>

Between 1995 and 1999, Hatfield scientists visited A Luoi repeatedly and discovered relatively high level of dioxin still remaining from the war in the former sites of the US bases. In most areas of the valley that were exposed to the chemicals through aerial spraying, the level of dioxin had become sufficiently low to warrant no concern. But in several spots where the US military built their bases, dioxin level was still high almost three decades after the spraying was over. Among these sites in A Luoi, they discovered the highest dioxin contamination at A So airbase (901 pg/g TEQ).<sup>4</sup> This level of dioxin, if discovered in an industrialised country, would be declared a ‘contaminated sites,’ Hatfield scientists noted.

Not quite satisfied with just taking soil samples, the scientists from Hatfield Consultants tested sediments at the bottom of wells, took samples of fish, ducks, pigs and human tissues, in order to trace the movement of dioxin from the soil through the food-chain to human tissues. Through this study, it was shown that the people living in the vicinity of A So airbase were still being contaminated with dioxins through their food.

Since then, they have tested samples from almost 3,000 former U.S. military bases scattered throughout South Vietnam, identifying twenty-eight ‘hot spots’ in total.<sup>5</sup> Among them the most

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<sup>3</sup> Aside from Agent Orange, the sources of dioxins included pesticides used in agriculture and municipal waste incineration, and forest fire also produced small amount of dioxin. Because A Luoi was less industrially developed, it was a perfect test site to determine whether dioxins that came from the herbicides used during the war still remained in the environment. Between 1996 and 1999, they visited A Luoi repeatedly to conduct an environmental survey of A Luoi valley in order to assess the remaining effects of the US herbicide program during the Vietnam War.

<sup>4</sup> See Hatfield 2000. Table 2.2 (The highest amount of 2,3,7,8-TCDD found in the soil of former A So airbase was 897 pg/g. Total TEQ was 901pg/g.)

<sup>5</sup> Jason Grotto 2010 “Findings point new path for dealing with Vietnam War's poisonous legacy: A Canadian firm says U.S. use of defoliants in Vietnam has left perilous dioxin levels, but that the issue is solvable.” [latimes.com/news/nation-and-world/la-fg-agent-orange3-2010jan03,0,6144418.story](http://latimes.com/news/nation-and-world/la-fg-agent-orange3-2010jan03,0,6144418.story)



highly contaminated sites were found around populated areas in Da Nang, Bien Hoa and Phu Cat. Along with these places, the site of former A So airbase, which lay between Dong Son commune and Huong Lam commune, and the people living there, came to be associated with dioxins.

In her book on mercury poisoning in Japan, Michiko Ishimure (2004) described how people subjected to scientific studies of this kind often expressed grave discomfort. Scientists were more likely associated with death and bad omen than cure and salvation. The very presence of scientists confirmed the suspicions villagers had about the contaminated household, thereby further exacerbating their stigma and the fears of their neighbours.

But there was also a hope that truth brought to light by the might of science can lead to justice and eventual vindication, when culpability of the chemical company was acknowledged and the victims could win compensation. Thus, where the scientific research was conducted, and on whom, had tremendous implications for the future distribution of both resources and stigma. Science was political, even at the level of fame and doom brought to places where research was conducted.

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Kim turned to her brother, Duc (my research assistant), and said something (like a complaint) in her own language.

“I told you. He is doing his PhD research on the after-effects of chemical warfare. Just answer his questions,” her brother replied to her impatiently in Vietnamese.

Kim was his elder sister, senior at least by fifteen years (they were not sure exactly what year Kim was born). When Duc was still young, Kim practically raised him along with her own son Le, because their mother Kan Kim was disabled during the War. Kan Kim was partially paralysed in her legs after being exposed to the chemicals. Kim’s sister, Thu, was also partially

paralysed in her legs in 1973, and died three days later.

“Was it because of the chemicals?” I asked.

Duc answered ‘yes,’ with confidence. Kim, on the other hand, was not so sure.

“People talked about the chemicals when somebody got paralysis,” she said. “They said that it was because of the chemicals. But that is what people say now. How could people know that back then?” she reasoned. “They thought that it was malaria or something like that. Now they know. Sure. During the war, I saw air planes spraying something. But I didn’t know what it was, and nobody bothered to tell me either. It was a lot later that I saw it on the television—the pictures of children born to parents who were exposed to the chemicals, you know. Before that, I didn’t know a thing.”<sup>6</sup> Memory played tricks. The particularity of one’s own experience became jumbled up with others’ tales, others’ memories, and the generality of the knowledge of the community at large.

During the first phase of my fieldwork in 2008, I encountered many indications that the people of A Luoi did not have their own causal theories for the illnesses now associated with the chemicals left by Americans. Like Kim, many of them recalled illnesses and deaths they witnessed in the past, and *now* associated them with Agent Orange in light of new scientific vocabulary they acquired in the past decade. But what about the time before such scientific discourse became available to them? Did they notice that they were being poisoned by the chemicals sprayed by the Americans? And if not, why not?<sup>7</sup>

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<sup>6</sup> When I began my interview, Kim was reluctant. Like many women I interviewed, she thought that I should interview her husband instead. At first, she said that her Vietnamese was not good, and wanted her brother to translate for her, but soon she found out how poor my Vietnamese was, and she began to speak in Vietnamese with confidence. Her brother, Duc, on the other hand, became bored and began to wander around. There was a Chinese drama on the TV, and soon he was pegged to the screen.

<sup>7</sup> I think the question is twofold. One is epistemological: Were there alternative interpretive framework that allowed them to make sense of the patterns of mysterious diseases that were occurring all around them when the scientific

In industrialised societies, scientists and their expertise often play a significant role in finding out the toxic etiology of illnesses.<sup>8</sup> This authority of scientists also gives rise to multiple gaps “between the individuals’ subjective experience of illness and the physician’s efforts to identify a specific biomedical disease” (Reich 1991: 143). Even when the symptoms are quite specific to the toxins (like in the case of thalidomide, asbestos, and vinyl chloride), the original identification of the disease is based on a statistical pattern. In the case of something like dioxin poisoning, whose associated symptoms are not specific to the chemical (except for chloracne), even when the individuals may suspect connections to specific toxins, the biomedical identification is hard to come by. Toxic poisonings are either new or often very rare, and the symptoms do not easily indicate the causes of the afflictions. Furthermore, physicians often left epidemiological work (that deals with a population-wide distribution of certain illnesses) to public health sectors. In the 1960s and 1970s when toxic pollution first became recognized as a social issue in countries like the United States and Japan, one of the reasons why it was difficult for the toxic contamination to be detected was that medical practitioners were often not well trained to detect toxic etiology, especially when the toxic chemicals were new (Ishimure 2004). Thus, falling within the epistemological lacuna between clinical medicine and the public health sector, the toxic etiology of diseases often remained unidentified until enough cases were observed.

Yet, ordinary people exposed to the chemicals can also have belief of their own about the toxic etiology of their illnesses. By the 1990s, in industrialised countries, toxic contaminations and health effects related to them were often discovered by citizens’ groups (Brown 1997). This

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discourse on Agent Orange and dioxin was not available? The other is phenomenological: Were there objective factors that obstructed the pattern of illness itself to be perceived by the locals?

<sup>8</sup> See Michael Reich (1991), Vena Das (1996), Ulrich Beck (1992), and Ishimure Michiko (2004[1980]), Satterfield (2003) etc.

process of identification typically began with the discovery of a disease cluster by lay public, who would then push for further research, public attention and eventually, the regulations. In such cases, the outcome of scientific research was closely followed and assessed by the local people in view of their own observed reality. My question was how ordinary citizens make sense of toxic contamination in societies where science has not penetrated so widely.

While I was in Hue city, preparing for my fieldwork in A Luoi valley, I had already heard the rumour that the ethnic minorities of A Luoi were quite versed in their knowledge of poison. Soon after I arrived in A Luoi, I also discovered that the traditional health specialists of A Luoi were spiritual healers. Out of these insights, a question emerged in my mind: Do the systems of belief associated with these knowledge help or obstruct local understanding about the toxic effects of dioxins? At this point in time, I had still assumed that the patterns of disease clusters caused by Agent Orange must be there, and the only problem in identifying the culprit was the lack of epistemic framework.

### ***Making Sense of Misfortune***

Anthropologists have long been interested in how different cultural groups explain misfortunes and illness. British anthropologist, E. E. Evans-Pritchard (1976[1937]), for example, wrote in the 1930s on the beliefs in witchcraft among the Azande of Sudan, claiming that their belief in witchcraft was a “natural philosophy” used to explain the causes of calamities. Witchcraft was ubiquitous in the life of Azande. If a man cuts his toe on a root sticking out of the ground, and ends up having an infected sore, it is the work of witchcraft. If a woman falls ill, or has a complication in labour, witchcraft is faulted. Their belief in witchcraft gave the Azande a way to

assign agency to accidents and afflictions that they encountered in their life.

Witchcraft was not a model of ‘objective causation’ Evans-Pritchard was familiar with, but Azande belief in witchcraft was not the sign of failure in their mental capacity either. The ostensibly mythic causation of witchcraft was accompanied by an understanding of natural causation. “What they explained by witchcraft were the particular conditions in a chain of causation which related an individual to natural happenings in such a way that he sustained injury.”<sup>9</sup> It appeared to Evans-Pritchard that through witchcraft, what Azande were interested in was not so much the general question of *how* certain misfortune happens, but *why* it happened to that particular person in that particular moment. Search for the logic unfamiliar to themselves was a classical quest for anthropologists.

Decades later, medical anthropologist Allan Young (1976) would call the system of beliefs like that of Azande an “externalising medical belief system”.<sup>10</sup> As opposed to ‘internalizing medical belief systems’, which focused on the physiological changes that “linked etiological events to the sequence of biological signs,” externalising medical belief systems, Young wrote, mainly sought the causes of illness outside the patients’ body, and “often only gross symptomatic distinctions [were] made”(148).

While Young cited Western biomedicine as an example of internalizing system, one branch of biomedicine—namely environmental epidemiology—has a tendency to look for external causation. While the theory of physiological mechanisms is certainly important in assigning causation, epidemiologists’ main task is to look for risk factors external to the patients’ body, such as environmental toxins, through patterns of diseases (although with the development of molecular

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<sup>9</sup> E. E. Evans-Pritchard. *Witchcraft, Oracles and Magic among Azande*. P.67

<sup>10</sup> Allan Young. 1976. INTERNALIZING AND EXTERNALIZING MEDICAL BELIEF SYSTEMS: AN ETHIOPIAN EXAMPLE. *Social Science of Medicine* Vol 10.

epidemiology, the exposure parameter is now increasingly measured in terms of the biomarkers of physiological changes induced by these external factors). The difference was that while Azande asked *why* a particular misfortune happened to a particular individual, epidemiologists sought general causation between diseases and its causative agents. My question was whether the traditional medical belief of ethnic minorities in A Luoi could make sense of what is now considered as the effects of Agent Orange, and how.

Until the war brought a horde of outsiders to the valley, the only locally available healing practice was spiritual healing.<sup>11</sup> Serving in the revolution gave the local ethnic people their first exposure to Western medicine and herbal medicines called *thuốc bắc*, which took its root in traditional Chinese medicine. These new medical practices have since been adopted widely in A Luoi to the extent that some ethnic minority people<sup>12</sup> would even scorn belief in charms, spirits and the spiritual healing of *kurus* (healer) as unscientific nonsense. Yet, by and large, the traditional healing practices of *kurus* are still popular in places like Dong Son and Huong Lam in the twenty-first century.

In the post-war era, the Central government of Vietnam implemented a policy to build medical clinics in all regions of Vietnam, and by the year 2000, most communes in A Luoi district had a medical clinic providing free medical care. As for spiritual healing, such practices were suppressed at some point in the past; but now they were coming back. *Kurus*, such as Kan So of Dong Son, now usually told the people to use the clinic as their first resort, since it is free. But the demand for the service of *kuru* was not decreasing. In fact, for Kan So, who was acknowledged by many as the best *kuru* in the region, the number of people requiring her service seemed to be

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<sup>11</sup> It was still practiced in the twenty-first century. It was like an open secret the local health officials liked to deny, but many used openly.

<sup>12</sup> The medical officer (not doctor or nurse, but someone with a brief training on how to explain to the villagers

increasing.

Among Katus, Taois and Pacos, illnesses and misfortunes were often attributed to troubled relationship with *giang*, or spirits. People could fall ill if they neglected their duty to their ancestral spirits. Encountering bad spirits, which they called *meriang*, could also lead them to bad consequences. Sometimes, *meriang* were the spirits of people who met untimely and unnatural deaths. Others were spirits of the forest and heaven. People who wandered by these spirits in the wilderness could lose their way, fall ill, go mad, or in some occasions, suffer from serious misfortunes like death and the destruction of their properties. There were certain localities where such angry spirits were concentrated, and these places would be known by the local people as a ‘land of poison’. The question was how disease patterns caused by Agent Orange overlapped with the epistemic explanations provided by these traditional systems of beliefs.

### ***Poison***

“Katu people knew a lot about poisonous plants. But they knew little about plants that cured illnesses.” As a man from Huong Lam once told me, the people of A Luoi were known for their poison lore. Of three ethnic groups who lived in the region—Katu, Taoi and Paco—Katu people were particularly well-known for their prowess with poison.<sup>13</sup> During my interviews with Katu elders, I was told that in the past they used anaesthetic substances taken from roots to catch fish (some still did). There were also other poisons like venoms from snakes and insects they used to smear arrow tips for hunting, and there were many kinds of powders they used for murders. Some

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<sup>13</sup> A New York Times article from 1962 described Katu people as aborigine ‘blood hunters,’ who terrorised the American reconnaissance by setting traps in the jungles “with poisoned spikes and shot at them with poisoned arrows.” (NYT Feb 12 1962) Whatever the truthfulness of this representation, one thing certain was that Katu people recognized themselves as those who were skilled with poisons, and they were held in awe and respect by other local ethnic people.

of these poisons were bought from their ‘cousins’, or the Katu people who lived in Quang Nam province to the south. Many others were available locally in their hills, such as the allspice jasmine Quynh Loc and his fellow villagers used during the war (see *La Ngon*).

These traditional poisons, however, were qualitatively different from new poisons like dioxins (see Chapter 6). When Quynh Loc decided to mix allspice jasmine in manure to avoid flies, he believed that its toxic quality crossed over the species difference between humans and insects. But he concluded that this toxicity did not cross over to the rice plant the manure was being used to fertilize. If he did not worry that the toxic substance released in his paddies might eventually harm his own health, it could be because he thought the persistence of the substance in soil was not long enough, or the dosage was not high enough. An alternative to these explanations was that such a question was simply never asked.

Many of the poisons used by the Katu were ‘real’ poisons, whose toxic nature can be verified scientifically, like allspice jasmine. But their notion of ‘poison’ could also blur into what may seem like the realm of mysticism to us. Poisoning was the prerogative of strangers in strange lands; the further you went away from home, the greater the fear of being poisoned became, and strangers were watched for poisoning their hosts.<sup>14</sup> Poison as material substance and ethereal existence sometimes co-existed in a single discourse as well. The story about a toxic substance slipped into a drink can be spoken alongside the stories of love potions and charms placed under people’s pillow to cause misfortunes. If Katu medical belief had a tendency to seek the culprit external to the body, did they have an alternative explanation to the pattern of mysterious diseases that were happening

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<sup>14</sup> People near the district centre of A Luoi told me that one needed to be vigilant about poisons when they went to places like Dong Son and A Roang at the southwest corner of the valley. People in Dong Son pointed at Quang Nam, and claimed that that is where poisoning was rampant there. There was a story of a stranger from A Roang, who ended up in Kim’s house, and almost poisoned the entire family had Kim’s daughter not caught him in action of putting poison in their teapot.



around them?

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The healer suddenly yawned with her mouth wide open and twisted her body slightly to the right. In the same move she placed a small lump into her mouth, chewing it slowly in an exaggerated motion. Soon, her eyes began to go wild. She slouched on her platform, raised the bun of her patient's hair, and blew onto the back of her neck. A long steady breath. She then raised the back of her shirt and breathed onto her client's spine. She was now chanting in a very high-pitched voice, a sweet voice like that of a child.

Meanwhile, her client kept on chatting with a woman in the shadow beside her. Today's client was also once a healer, but she had lost her power. Unable to call spirits into herself to alleviate her pain, she was now in constant pain. Being a medium was to live alongside pain. Residing in the zone between illness and wellbeing, to become a spiritual healer, or *kuru*, strong affinity to spirits was not enough; one must also have had an experience of a prolonged and potentially life-threatening illness. Kan So of Dong Son had a history of grave illness that lasted for years. Kan Diep of Huong Lam almost died ten years ago. Through their illnesses, those who became *kurus* developed symbiotic relationship with the spirit. There was no formal apprenticeship or learning of lore; only through their fraternity with spirits and illness were they able to gain the power to heal the others.

*Kurus* intervene in the process of illness and misfortune by performing rituals and conversing with spirits. For minor illnesses, a *kuru* would inquire of the spirit what ails it, and appease its anger by breathing onto the patient or burning incense. One could also take a grain of rice breathed on by the *kuru* and eat it or rub the region of the body where one feels discomfort

with it. In case of familial disunity, ancestral spirits, which could cause illnesses and misfortunes, can be appeased by burning incense and giving an offering of a duck or a chicken. Other spirits can also be appeased through mixtures of these rituals, in some cases involving full possession of the *kuru* by the spirit.

Anthropologists who have written on shamanistic healing have suggested that a kind of ‘symbolic healing’ was involved in these processes of spiritual healing (Levi-Strauss 1972). As Young (1976) wrote, “the healer’s therapeutic powers are typically expressed in his ability to enter into etiology-narratives in order to compete against purposive agencies and his access to anodynes (from his own point of view) for symptomatic complaints.” The spiritual healers cure by enlisting their patients’ emotional force. By locating conflicts and realigning the clients’ subjective understanding of their illness to an acceptable explanatory framework, the healer invigorates psychological force in service of effecting physical cure (Douglas 1970). But would an anodyne or psychological relief be helpful for patients with chronic illnesses and disabilities now attributed to Agent Orange?

When I asked Kan Diep from Huong Lam if she can cure diseases caused by Agent Orange, she said, “Are you crazy?” and laughed scandalously. I was clearly asking the wrong question. “How can we cure, what doctors at hospitals could not?” she said. Kan So, on the other hand, claimed that she might be able to cure them if the patients came to see her in the early stage of their illness. Conditions like pain and numbness in the legs and arms, sickness, and temporary blindness, which were the examples she raised as the ailments caused by the chemicals, she can cure sometimes. But grave disorders like birth defects and cancers, she cannot cure. People sometimes came to *kurus* after all other resorts in hospitals and clinics were exhausted. In the meantime, their

illnesses had often progressed to the point where there was no longer anything she could do.

Kan So observed a general decline in health of the people in the community of Dong Son. When faced with the wide prevalence of the diseases and disabilities now thought to be caused by Agent Orange, then, how did *kurus*, as the community's health specialists, see and respond?

People living in the contaminated area were "thin," she said, "because they cannot eat a lot. Not only old people, but also young people, including children. This year, there are a lot of cases of stomach ache. There is nothing wrong with what they eat, but they get stomach ache anyway." She thought that the chemicals were probably at fault for increased health problems, but how this chemical etiology was integrated into the *kuru*'s traditional epistemology was not clear. Kan So seemed to incorporate it into her epistemic framework, as she explained the illnesses attributed to Agent Orange as something caused by American spirits that now dwelled in places like the former site of US A So airbase. But this was how she interpreted things now. Both Kan So and Kan Diep had become *kurus* relatively recently, and it appeared, they had little to say about the health of the community before the end of the 1990s, which I was interested.

Beyond a general decline in health, what complicated my inquiry about alternative interpretive frameworks for the effects of Agent Orange prior to the introduction of scientific discourse was terminology. The alleged health effects of dioxins were mostly not specific to dioxins. Chloracne, which is considered a 'signature disease' of dioxin, was rare. Furthermore, biomedical disease categories like cancers and diabetes, and the Vietnamese words that referred to birth defects (eg. *di tật bẩm sinh*, *quái thai*) were often automatically associated with Agent Orange in contemporary A Luoi.<sup>15</sup>

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<sup>15</sup> In Kan So's discourse, the language of spirits was mixed together with the language of biomedicine, and words such as '*ung thư*' (cancers), '*sốt rét*' (malaria) and '*miễn dịch*' (immunity). The extent of this syncretism and its

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As I was at a loss trying to figure out how to ask about the diseases people associated with Agent Orange without mentioning the word ‘Agent Orange’, it suddenly occurred to me that the pattern of diseases which I assumed *should* have alerted people to the toxicity of Agent Orange may not have existed previously. Before asking the epistemological question, I realised, I had to ask: Were there objective factors that obstructed the pattern of illness itself to emerge and be perceived by the locals? Was there really this ‘pattern of illnesses’ that clearly implicated Agent Orange?

### ***Cancer***

There was the sound of a drum in the distance.

“That’s for the young man who died of liver cancer yesterday,” Kim explained.

“They sound the drum to send his spirit to where his ancestors went. Or so the people said in the olden days,” Duc added.

It was their cousin who had died. He was only thirty years old. “He had two kids”, said Kim. He was in the hospital in Hue for about a year with liver cancer. After all that, he still could not be cured. “It must have cost him a lot of money to be hospitalised in Hue for so long,” Duc remarked. The young man’s mother had also died of liver cancer few years before him.

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It was dark and slightly damp inside Thao’s makeshift house. Her main house was now being renovated, and her family was making a temporary dwelling in their shed. Thao’s eighteen year old

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implications requires a further study. Originally, I hypothesised that the in-surge of biomedical discourse with the knowledge about Agent Orange may have caused disruption to local traditional medical belief system, which could not make sense of the health effects caused by Agent Orange. This hypothesis, at least, appears to be unfounded.

daughter came in and sat on the bed behind the shelf and switched on the television. There was a sound of the drum in the distance.

Cancer, they said, was rich person's disease. If clinical diagnosis remained within the limit of insurable medical cost, pathological tests and cancer treatment put them over that limit. The poor who could not afford the cost of operation and chemotherapy often did not bother to get the diagnosis even now.

Four years ago, Thao was diagnosed with breast cancer. She took a leave of absence from the elementary school where she worked as a vice principal, and went to Hue to get mastectomy. She went through chemo for the next half a year. But after spending nearly \$5,000 on five bottles of chemo, she discovered two small knots right beside her left breast.<sup>16</sup> It had metastasized. That was when she went to see a man who was rumoured to have recovered from lung cancer.

The old man was well beyond his time. The doctors gave him a few months; he lived for seven years longer so far, and he was still alive and well. He gave her a flask of king cobra wine, and told her to eat the snake's bile and drink its fresh blood whenever she had a chance. After three years and seven king cobras, Thao feels quite well. Her tumours were gone, her hair grew back. Her skin regained its radiance. It was an expensive remedy, but no more expensive than going to the hospital.

There are so many people with cancer here. Lung cancer, liver cancer, breast cancer, kidney cancer, colon cancer, leukemia. There were twins in Hong Thuong, and few years ago, one of them came down with leukemia. The child was in the hospital when I was there. It was so sad. She was so young. I remember her saying to her mother one time, 'Don't let me die, mom. Let me live past Tet Holiday at least.' We all wept then.

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<sup>16</sup> Somehow she quoted the price of chemo in dollars rather than in Vietnamese *dong*.

“It must have something to do with the war and the chemicals,” muttered Thao. Cancer was unheard of in the olden days. People got goitres, stomach aches and all those infectious diseases like malaria and cholera, but not cancers.

Of course, there can be many reasons cancer was unheard of in this region before the war. War not only brought combats and misery, but also exposure to a new language of modern science and technology. As a local doctor once told me, people in this region did not know about cancer before the war, and there were certainly no statistics on its incident rates. This was the classic challenge for cancer epidemiology even in industrialised societies; there was simply no way of knowing through historical records whether increases in cancer rates in modern times is due to the exposure to carcinogenic substances in the environment, or due to other factors such as under-diagnosis or short life-expectancy in the past.<sup>17</sup>

Thao complained that she was told that her breast cancer was not caused by the chemicals. Indeed, breast cancer is not listed as the condition associated with Agent Orange exposure in either American or Vietnamese Agent Orange compensation programs. There were certainly other types of cancer, for which scientists concluded that evidence was stronger to suggest a toxic etiology. But such distinctions were less meaningful to the ordinary people of A Luoi like Thao.

### ***Confounded by Secrecy***

It was just about now. The early summer when the spring harvest was finished and they were preparing the ground for the next planting season. Kim was at home, pregnant with her second baby. There were many things that required looking after around the house, especially with

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<sup>17</sup> Michael Gough (1997), in arguing that there was no significant increase in cancer rate due to environmental pollutants, exclusively cites cancer mortality, rather than incidents. Cancer mortality decreases with the improvement of therapeutic technology, so this is not a great indicator for the effects of environmental pollutants on cancer incidents.)

everybody else in the field. Some were away in the swidden fields on the hills, which meant that sometimes they did not return for days. There were no buffalos back then, so everything had to be done by hand. They even had to share a plough and a hoe among three or four households.

“I was living just below near the road and the stream, in *nha san*.<sup>18</sup> Right below, where there is a large tree. You know which one I’m talking about? Below, where there is a bomb crater.”<sup>19</sup> It suddenly became dark outside, and started to rain. Soon, the battering of the raindrops on the roof was so loud that everything else seemed to have grown silent.

“I was lucky to be able to deliver, because it was coming out the wrong side up, and there was nobody to help me. By the time my mother came up after about an hour, it was all over. The umbilical chord I had cut off was lying on the floor. The baby wrapped in a cloth and in my arms.”

Kim’s husband was then at the district centre, working for the district government as an agricultural engineer. During the war, he was sent to Hanoi and to China to receive education and training. Upon his return, he was assigned the task of teaching the local ethnic minorities how to grow paddy rice and use fertilizers, which were introduced to the region after the war. His duty involved travelling to each commune, directing and advising on wet rice cultivation. And since his duty for the district government often kept him at the district centre, he was often away from home. So it was Kim who named the baby ‘Lu’ when he was born, then later called him ‘Dal’ when it was discovered that it had no anus.

“If we had today’s technology it would be still alive now,” Duc said turning away from the television. Kim ignored her brother’s comment and continued:

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<sup>18</sup> Shack built with woven grass.

<sup>19</sup> There were certainly many bomb craters around this region. The satellite image on Google maps shows the land peppered with little round holes. Not all of them are from the war time, since some of them were the results of recent detonation of unexploded ordinances.

I took him to the hospital in A Luoi. It was there for one night, and died. The doctor said, don't bother going to Hue. Even if you give it an operation, it would only live, if lucky, for three years. Because they would have to make an anus on his side. So the doctor, it was a lady, she said, 'just let it go. Even if you take care of it well, it will only live for three years.' That's how she advised me. But I couldn't let go. It was only after I had done all the paper work to take him to the hospital in Hue, that the baby died.

After that I brought him back. Brought it to station 94 in A Dot Commune just south of Huong Lam. Husband and wife, taking turn pedalling the bicycle all the way back to A Dot, all the way to A Luoi district centre and back. It took longer than two hours each way. It wasn't like the road now. If you get to the part where the road is not very good, you had to get off the bike and push it.

The baby died because he didn't have an anus. He still suckled, though. And he would throw up. Pity. It got full and swelled up, bigger and bigger, and it would puke the milk it drank. But it still suckled. My mistake was that after giving birth to the baby, I didn't find out right away that it didn't have an anus. It was after three days. I was wiping my baby with a towel, and I realised that there was something wrong. Its anus was missing. At first I thought he was perfectly normal. Nothing wrong. He weighed enough. He was not premature. Healthy. Cried loudly.

Hope for the survival of babies was cut short in the early hours of the discovery of their defects by physicians, nurses and family members, but the parents often held onto the slightest hope that the baby would grow up normal.

As I noted earlier, in trying to explain the rumour that ethnic minorities of A Luoi has gained certain 'resistance' to dioxin, my research assistant, Giang, had suggested that it was because they had a *cultural proclivity* to disallow any babies with birth defects to survive. In contrary to his suggestion, most parents I interviewed emphasized how hard they tried to save their babies' lives. There was always the possibility that they were aware of how lowland Kinh people represented them and tried to counteract this stereotype by stressing the opposite.<sup>20</sup> But I was never sure of this.

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<sup>20</sup> In a Brazilian shantytown, Nancy Scheper-Hughes (1992: 22) "stumbled on a situation in which shantytown mothers appeared to have 'suspended the ethical'—compassion, emphatic love, and care—toward some of their weak



During my stay in A Luoi, I heard no rumours and saw no evidence of the practice of infanticide of babies with abnormalities among the ethnic people of A Luoi. For obvious reason, I did not ask this question openly. Only once, I ventured to ask a midwife of Dong Son about the practice of abortion in the region in general.

Her voice then became suddenly hushed. “Here, no one goes through abortion,” she said. “Maybe there are in the cities, but not here. In the mountains, very few.”

I had no way of confirming this claim. So, instead, I sought signs of structural configurations and cultural practices that might have led babies with severe birth defects to be forgotten from social memory. One possible explanation could be gleaned from the customs surrounding the commemorations of dead babies. Among the Katu and Paco people of Huong Lam and Dong Son, the corpse of a baby born with birth defects was often considered polluting. Traditionally, when a baby with birth defects dies, the local people did not hold a funeral rite. They would not let others come near it either. It was thought to be very unlucky to have a disfigured baby. And its presence was thought to be very dangerous. *Quái thai* (monster birth) is called *ka sing* in

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and sickly infants.” High infant mortality rate and the staggering poverty in which these mothers are forced to raise their children may convince us of the ‘reasonableness’ of the lack of motherly love and the deliberate neglect of the babies stigmatised as ‘already wanting to die.’ But on the ethical and moral plane, Scheper-Hughes (1992: 22) was nonetheless “disturb[ed], give[n] reason to pause...and to doubt.” (Anthropologists Marilyn K. Nations and R.L. Rehbun (1988) challenge Scheper-Hughes’ interpretation by drawing on cultural and religious explanation for why the shantytown mothers appear to lack emotional response to the child-death, while deep down they do feel grief. Their assumption is that while the affective experiences are universal, the way they are expressed is different. The mothers Scheper-Hughes found to be dispassionate toward dying child may in fact feel grief, but Scheper-Hughes misread their emotional response. Their attempt to redeem the ethical piety of the shantytown mothers is convincing and commendable. Yet, under their explanation, the responses of the shantytown mothers are comprehended without any flaw, which is, to me, problematic.)

Ordinarily, time-worn wisdom of anthropology would warn us against any sort of ‘ethics-talks.’ Ethics and moralities are always contingent upon the specific culture. We are to make sense of their practices: not to judge. In suggesting that the shantytown mothers of Alto do Cruzeiro ‘suspend the ethical,’ Scheper-Hughes was aware that she risked imposing her own ethical standard on to her ethnographic Others. Is ‘motherly love,’ as a North American would imagine it, universal? she asked rhetorically. Can the practices of the shantytown mothers be measured up against the standard of the North?

Katu, but their spirits did not become *meriang* (angry spirit) like the ones who died unfortunate deaths through accidents or violence. When the *quái thai* baby dies it becomes a *cơ mịch* (good spirit); but its body is dangerous. They were treated in a manner similar to people with leprosy. They would wrap the body in a cloth and place a stone over it and cover it with soil. They do not place a tomb stone to mark its place.

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“Why are you recording all this? Am I going to prison?” Kim suddenly turned to my voice recorder, laughing.

“No, no. To write my thesis,” I said apologetically. She did nod when I mumbled about whether I could use the recorder, but I did not pay a lot of attention to the half tilt of her head because her younger brother Duc said “Yes. No problem” right away, and that was that.

She smiled and began asking about me. How old are you? How many people are in your family? What do they do? How come you are not married at the age of 33? *Well, you interview me. I interview you too.* She seemed to be saying. After a while I grew restless thinking about all the useless information (about myself!) I am filling my recorder with, so I asked, “so, when you had two babies who were *quái thai*, how did you feel?” I was desperate to change the topic. But I regretted it right away. What the heck am I asking? “How did you feel?”!

“Of course I felt sad,” Kim answered, scandalized by my stupidity. “Bearing it for nine months and ten days, and it turns out like this. Sad. You feel hatred for the Americans. Americans invaded us and had this war, and even afterward, we suffer from illnesses because of the chemicals they used.”

“So you knew back then that it was because of the chemicals?” *You just said you didn’t know it until more recently?* I thought to myself, realizing how so obviously I was crosschecking her story.

“Of course. Otherwise how could there be monster births? How could there be babies without anus if there were no chemicals? Over here you never had something like that before the war. After the war, there were probably many cases like that. But I don’t know for sure. It is our custom. We don’t talk about these kind of things because we are ashamed. If you had kids like that, and if you told the others, they’d laugh. So you don’t talk.”

“They laugh at you?”

“I didn’t tell the others. They would have just laughed at me, or criticized me if I had.” She imagined there were also others who had children like that: the ones with no anus; ones like turtles: no arms, no legs. They usually died within minutes after they came out of the mothers’ womb, even when the mothers had carried them to term. Others could just take them for a miscarriage. No one needed to know. Ms. Mach, a nurse working at the clinic in Dong Son, remembered that while her mother had many problems with giving birth to healthy children, she did not tell her until Ms. Mach had her own children.

Laughter was a response I frequently saw when people talked about *monster births*. ‘Babies’ with severe deformity were “not humans,” they said. They described them variously as ‘animal’, ‘bear’ or ‘a chunk of flesh’. Perhaps they felt embarrassed. Perhaps they did not know how to feel. It is probably unlikely that they found it genuinely funny, but perhaps, laughter was simply the most convenient way of expressing something they were not used to talking about. “Seriousness burdens us with hopeless situations, but laughter lifts us above them and delivers us from them,” as

Mikhail Bakhtin wrote, faced with the shock of seeing disfigured babies, laughter might have been their defence mechanism to fend off madness.<sup>21</sup>

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Duc began to snore on the floor beside us. “I’m telling you this because you are working on your thesis,” said Kim. “But outside, I dare not say. They’ll laugh. They’ll criticise you. You get pregnant, and give birth, but it turns out not to be a human. You don’t tell others. You don’t ask others.” But silence and secrecy, and even laughter were the enemies of truth and science.

Back in the 1990s when Dr. Phuong began to work at the health clinic in Huong Lam, there were many stillbirths and spontaneous abortions. The condition called molar pregnancy or hydatidiform mole was very common. “It was a condition in which baby does not turn into a baby, but stays like frog eggs,” she explained. “There are many possible causes, but the presence of toxic chemicals probably increases its rate. Here, there are more toxic chemicals, so more people get molar pregnancy.”<sup>22</sup> There were also some cases of *quái thai* (monster births) with “no arms, no legs, no head, no eyes and no nose.” More recently she remembers a case of hydrocephaly in the year 2000. She helped give birth to it, but it died soon after.

The rate of these problems with reproduction was entangled with many different problems. Ms. Mach noted that there were many miscarriages even now, but suggested that they were mostly because of malnutrition. Dong Son, in particular, was a New Economic Zone; poverty and lack of nutritious food was particularly stark in the early days when they had just moved in from Hong

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<sup>21</sup> Bakhtin, Mikhail. 1986. From Notes Made in 1970-1971. P.134. in *Speech Genres and Other Late Essays*. Translated by Vern McGee. Austin: University of Texas Press

<sup>22</sup> Somehow, while molar pregnancy was mentioned in the literature on Agent Orange in Vietnamese literature, it was rarely mentioned in non-Vietnamese studies, and the government statistics used for Vietnamese studies were said to be unreliable (Constable, John and Maureen Hatch. 1983. *Reproductive Effects of Herbicide Exposure in Vietnam: Recent Studies by the Vietnamese and Others*. Teratogenesis, Carcinogenesis, and Mutagenesis 5231-250 (1985))

Thuy commune in the 1990s. The number of complications with birth was also influenced by the state-led family planning campaign. “Now, the use of family planning is more common, so people give birth to fewer children. And there are fewer cases of stillbirth as well.”

Vietnam, in the postwar era (and even now), was such an unruly and messy laboratory to have made accurate epidemiological studies impossible. The failure to produce epidemiological studies of international standard, therefore, was not a reflection on the competence of Vietnamese scientists, or lack thereof, but a particular kind of society epidemiological research presumed. Most people in rural Vietnam, in places like A Luoi, delivered their babies at home until recently. The practice of recording pregnancy and delivery, success and problems of birthing was something new. Now, the authority has imposed the rule that people have to give the newborns a name and report it as soon as they are born. But local custom only a decade ago or so was to wait for a few months before the newborns were given name, just to make sure that it would survive. Especially in the postwar era when many babies died, they held off giving names to their newborn babies for longer; and there was no record that attested to this increase in infant death. In such a context, scientists conducting retroactive cohort studies were at the mercy of the people to tell them exactly what happened.

The price of freedom from a bureaucratic order which required the naming and recording of infant deaths and disabilities was a lack of knowledge about the incident rates of reproductive problems, although it appeared people seemed to be quite willing to forgo that knowledge.

### ***Imperfect Laboratory***

Even after the thalidomide crisis in the 1960s began to draw attention to the need for teratological evaluations of new drugs and chemicals in industrialised nations, animal testing of

these substances for teratological characteristic remained crude for few more years. Samples were often administered orally in the diet throughout the pregnancy of the laboratory mice, rather than selectively choosing the precise timing when fetuses in utero are the most susceptible to environmental influence (Wilson and Warkany 1985). But the greatest mistake in those days was that they allowed the pregnancies to follow a natural course to delivery, thereby permitting the mother mice to destroy her deformed or prenatally dead fetus before the researcher could make the observation.

Sociologist Bruno Latour (1983) wrote in his essay on Louis Pasteur's experiment on anthrax vaccine in cattle that the key to Pasteur's success lay in his ability to reconstruct the condition of the laboratory *in real life*. Epidemiology, which had long dreamed of emulating the carefully controlled context of laboratory, also required the transformation of the reality to fit laboratory conditions. Diligent recording of the precise timing and the manner of exposure to the disease agents, the onset of symptoms, the course of morbidity and mortality—in other words, medical bureaucracy—was essential for epidemiological research. The absence of other causative factors or any other caprice of humans and nature also had to be carefully eliminated. Epidemiologists call these undesired factors that obscure the true causation from the patterns that emerge through their statistical analysis, 'confounding factors'.

In 1976, an accident at a chemical plant belonging to Hoffman-La Roche chemical company in Seveso, Italy, caused a large amount of TCDD dioxins to be released in the areas surrounding it (Whiteside 1979). Within a few months of the accident, almost one third of pregnant women living in the vicinity of the factory were said to have had voluntary abortion (Institute of Medicine 2005: 373). It was 'hoped' that the case in Seveso offered a "golden opportunity to get a handle on dioxin

exposure and what it means to humans.”<sup>23</sup> But the study was grossly confounded with regards to its link to congenital malformations because of the choices made by these young women.

One of the greatest challenges for the epidemiological studies on the chemical etiology of birth defects was that people would do much to avoid having a disabled child. The womb was such a secret space that it resisted proselytization by science. There was no way of forcing the mothers to carry the fetus to term just so as to ascertain its health or morbidity when there is a suspicion that they may have been exposed to teratogenic agents. Nor was it realistic to expect that the prospective mothers who were fearful of giving birth to a baby with birth defects would be absolutely forthcoming to the researchers if, by any chance, they took their fate into their own hand by private means. As John Walsh reported, “the people of Seveso made a point of not wanting to be ‘treated like guinea pigs’” (Walsh 1977).

There was also an ironic fact that it was embryos with relatively mild defects that developed into fetuses with congenital defects. In any normal circumstances, there are a certain percentage of fertilized eggs that never mature into viable fetuses (due to genetic mutations, and so on). These nonviable embryos are spontaneously aborted. The data from Seveso, for example, shows a sharp increase in spontaneous abortion in 1977 (Sterling 1984). This was followed by a gradual decrease in spontaneous abortion, and a gradual increase in the incidents of malformations such as spina bifida, neural tube defects, hypospadias and polydactyly. Thus, the most visible relics of the accident were born some time afterward, when the worst had already past.

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<sup>23</sup> “there seems to be a general sense of disappointment that the major opportunity has been missed to advance scientific understanding of the behavior and effects of dioxin under such conditions” (Walsh 1977). Scientists regretted that more systematic record was not kept. The people of Seveso made a point that they did not want to be treated like guinea pigs.

Even now, epidemiological evidence linking dioxins to congenital defects remains equivocal at best. In 2006, Ngo and his colleagues (2006) from The Australian National University conducted a meta-analysis of various epidemiological studies on the topic and found that on average the risk of having children with birth defects when the parents were exposed to dioxin was almost twofold higher than the control groups. This number went up to threefold when they looked only at the Vietnamese studies. Non-Vietnamese studies, however, showed almost non-detectable increases in risk. According to an American public health scientist Arnold Schechter (2006b), this result was severely limited by the fact that many of the Vietnamese studies were not published and have not gone through a peer-review process.<sup>24</sup> In fact, some younger Vietnamese scientists also commented on the lack of methodological rigor and sophistication of Vietnamese epidemiological studies, although they mentioned no specifics of what was so wrong with them.<sup>25</sup>

“The Vietnamese government is using malformed babies as a symbol of Agent Orange damage,” Schechter told the reporter of the journal *Science* (Stone 2007). He argued that Ngo and his colleagues’ meta-analysis ends up concealing political and social biases. By citing the report by the US Institute of Medicine, Schechter argues that for birth-defects other than spina bifida and anencephaly, there is still only suggestive evidence of association with Agent Orange exposure. But how come scientific evidence linking dioxin to birth defects remains so shoddy, when in

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<sup>24</sup> Schechter (2006b) was particularly sceptical about Ngo et al’s (2006) use of meta-analysis. Meta-analysis is a quantitative means, which allows scholars to increase the statistical power and precision of relative risk assessment by combining the results from different studies (Weed 2000). Its problem as a method, however, has also been pointed out (Weed 2000, IOM 2004). Different study designs and precisions, and the heterogeneous research subjects and publication biases often make the amalgamation of research results in meta-analysis dubious. What particularly troubled Schechter was that, in their meta-analysis, Ngo et al gave equal weight to the results from studies that were peer-reviewed and the studies that were not peer-reviewed, many of which (not surprisingly) were the studies by Vietnamese scientists. The results of the studies by Vietnamese scientists and non-Vietnamese scientists differed quite a bit as well (in average Vietnamese studies showed RR=3.00, 95% CI = 2.19-4.12, while non-Vietnamese studies showed RR=1.29, 95% CI = 1.04-1.59). Where does this difference come from?

<sup>25</sup> personal communications



popular discourse Agent Orange has been unequivocally decried for causing birth defects?

There are plenty of factors that contributed to the uncertainty regarding the association between dioxins and reproductive and congenital effects in Vietnam. Firstly, many of the published studies on the effects of dioxin come from the population in which primarily men were exposed (e.g. Vietnam Veterans and chemical factory workers), while Vietnamese cases also include maternal exposure. The mechanism through which maternal exposure produces congenital problems is better understood (since maternal exposure means that the fetus is exposed to the toxin in the womb), but there are fewer epidemiological studies (Institute of Medicine 2004).

Secondly, as seen in the case of A Luoi, reproductive disorders such as spontaneous abortion, stillbirth and congenital malformation are particularly sensitive issues. Some people may find it difficult to talk about them. Furthermore, any sub-clinical or voluntary abortions, and birth controls used among high-risk populations would reduce the statistical incidents of reproductive disorders due to the toxins in the study. As we saw above, the pregnant women living near the chemical plant at Seveso after the accident aborted their pregnancy, which meant that these women had to be excluded from the study on spontaneous abortion. (Institute of Medicine 2004: 373).

“Pathology begins with deaths and diseases”; as one scientist in Ishimure’s work (2004) remarked, there is a sinister fact that mortality and morbidity are, in a sense, ‘good news’ for the hypotheses of positive association between health and chemicals. ‘Survival,’ ‘resilience,’ or any kind of precautionary acts to decrease the chance of developing disorders may work against the scientific effort to ascertain causation. Ironically, in the face of sceptical and inflexible science, as Maya Todeschini (2001) also found in her studies on the victims of atomic bomb in Hiroshima,

qualities that should ordinarily be cherished and celebrated may work against the victims in seeking justice by rendering the knowledge of causation difficult to come by.

## ***Conclusion***

Life was full of confounding variables especially in this part of the nation after the war. A mutilated hand, which a man claimed to be the effect of Agent Orange at first, was later found to be a wound from an old bomb exploding in his hand; distorted legs caused by polio were often misrecognized as birth defects resulting from the chemicals.

“A lot of people complain about backache, and say that it is because of the chemicals nowadays,” said Dr. Sang, a Paco physician working at the Central Hospital of A Luoi. “But that is actually because they now work on paddy fields. When they worked in their swidden, they worked on the hillsides, so it wasn’t as hard for their backs as it is with paddy rice cultivation.” Unlike the cases of toxic disasters in places like Minamata, Seveso and Love Canal, the toxic effects of Agent Orange and dioxin were not the only changing variables in an otherwise placid life for the people of A Luoi. Within the sea of changes that were brought to this region through the war and post-war reconstruction, the insidious effects of poison that now contaminated their bodies were easily overlooked.

In the contemporary A Luoi, the word ‘*chat doc*’<sup>26</sup> (toxic agent) has entered the local lexicon with vengeance as a generalised idiom of distress. But what it meant, what sort of sentiments this discourse elicited, and what kind of rights and responsibilities it was perceived to entail were whole other questions entangled with the perception of risk and political identity.

Nowadays, people attribute a plethora of illnesses and discomforts (from backache to

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<sup>26</sup> From hereon I will omit diacritics and refer it as ‘chat doc’, or ‘doc’.

weakness of nocturnal vision) to Agent Orange. One young man in Dong Son even attributed general weakness and inferior physical stature to dioxins, saying “Katu people were all taller and stronger before. Now we are all short like me.”<sup>27</sup>

When I told this story to a scientist from Hatfield Consultants, he exclaimed, “Americans would love to hear that. They’d say, ‘see, they fault everything on Agent Orange. So unscientific!’” Somehow, for some Americans, the idea that now some Vietnamese people see all sorts of illnesses and vices as the result of Agent Orange spraying, imply that all blames are without foundation and thus should be ignored.

There is clearly a lapse of logic in this argument. I believe that the US Ranch Hand program did much harm to Vietnam and its people, and this harm undoubtedly includes human health effects. The question, however, is whether it is important to know the precise health effects attributable to Agent Orange, and for whom and to what effects. The other question is: what kind of impact knowledge about the toxic effects of Agent Orange has had on the cognitive world of the people living in A Luoi. These two are separate yet entangled questions. I shall approach these questions in next two chapters.

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<sup>27</sup> I have a sense that he was just pulling my legs. He looked as if he was trying to stop himself from laughing. When I challenged him on this observation by saying that I had just seen someone quite tall, he now answered: “Tall people here are weak and crazy.”

*Psychosis*

Vinh produced a small booklet recording the prescription of the drugs he was taking. It says *Hal\*\*\*of, Am\*\*\*al, Me\*\*\*nf, Be\*\*\*ss*. It is the usual scribbles of doctors. Hardly legible. Since 1998, or 1999, whenever it was that he had an episode of psychosis, Vinh has been taking a cocktail of drugs every fifteen days to keep his ‘pain’ away.

He lived in a newly built house with cement walls, a turquoise coloured tiles for the floor and tin roof. It was built under the Project 292, which was the newest version of the array of state projects implemented in the new millennium in order to elevate the standard of living of the ethnic minorities living in remote areas. Across the doorway, there was an altar, which held a picture of Ho Chi Minh, but otherwise stood empty. There was no clay pot that held ancestral spirits, which was seen in most houses in this region. Vinh lived there with his wife and two remaining children. Two of his children had died. The oldest daughter died in a car accident two years ago. With the compensation from the truck driver who caused the accident, they bought this altar, a TV and a stereo. After all that they were eight million dong in debt.

“He doesn’t know how to take care of his money,” Duc said, and Vinh smiled sheepishly and scratched his head. They were neighbours and knew each other since they were young boys.

Vinh’s family moved to Dong Son in 1991, just a year after he was married. It was a cold winter, he remembered, especially in a temporary shack they built for themselves. The newly wedded couple got a room split off from the rest by a sheet of cloth, hanging from the roof. The period between 1991 and 1998 was the most difficult time. They cultivated paddy rice for the first time. They borrowed money from the government to raise swine and cattle.

Then that incident happened.

Their third daughter was born in 1998. Died that year, when she was six months old.

“Wait, wait. How did she die?” I asked.

“I told you already. Hit. Fell. Died. He had *tâm thần* (psychosis),” said Duc, impatiently. And I realised that he had indeed told me this story already. It was an example of how easily things unexpected slip through without detection when there is a lack of competence with language.

After beating his wife and daughters, Vinh ran into the forest. The squad of police came down and searched for him throughout the forest. He went all the way to Laos. “Three days and three nights!” exclaimed Duc as we sat on the mat laid on the floor in Vinh’s house. Vinh may have gone mad, but he still had his forest skills. “He was so strong back then,” said Duc who was few years younger than Vinh, “he could fell a tree, a huge tree, all by himself! We all admired him!”

Eventually Vinh was caught and brought to the prison in Lao Thu Phu. Even there, somehow he managed to escape the prison cell through a little space between ceiling and the bars. He was caught again and brought back to the prison. After a year or so, they decided that he was mentally ill, and put him on medication and sent him home to his wife and his remaining children who were out of the hospital by then.

Ever since that incident which he remembered nothing of, he had stiff muscles and laryngitis. He had constant hoarse voice, and when the drug began to wear off toward the end of the fifteen-day term, he started to be in ‘pain,’ and fear of others crept in. He has never missed his medicine. This, too, they say, is the effect of Agent Orange. He now receives 300,000 dong per month on Agent Orange disability on top of his usual disability pay of 120,000 dong.

But does Agent Orange cause mental illness? Until then, I had never heard or read of such a thing. Indeed, if you look at the Decision 09/2008/ QĐ-BYT of Ministry of Health, “mental disorder” is included in the diseases associated with Agent Orange exposure. As far as I can tell, this was the first official document in Vietnam that actually listed the diseases associated with Agent Orange exposure to be used in considering for Agent Orange disability payment.

*Soft tissue sarcoma, Non-Hodgkin’s lymphoma, Hodgkin’s disease, Lung and Bronchus cancer, Trachea cancer, Larynx cancer, Prostate cancer, Primary liver cancers, Kahler’s disease, Acute and subacute peripheral neuropathy, Spina Bifida, Chloracne, Type 2 Diabetes, Porphyria cutanea tarda, and etc....* (See Appendix 1). At the bottom of the list of diseases with specific medical nosology, there are entries of three general conditions: “Unusual births”, “congenital malformation and birth defects (associated with Agent Orange)”, and “mental disorders.”

Curiously, the Veterans’ Affairs of the United States, on the other hand, does not include any psychiatric disorders in their list for Agent Orange compensation. There are neurological disorders such as Parkinson’s disease and peripheral neuropathy, but not psychiatric disorders. As mentioned earlier, in the 1950s and the 60s, there were scattered reports that suggested that the exposure to 2,4,5-T caused severe personality and psychological disorders (see chapter 5). But these hypotheses virtually disappear in the post-war era.

In the United States, ‘post-war syndromes’<sup>1</sup> associated with Vietnam War were divided into physical and mental disorders; former was associated with Agent Orange, and the latter was associated with Post Traumatic Stress Disorder (PTSD). In the 1980s, there were several studies which tried to show the link between chemical exposure and disorders like neurasthenia and PTSD

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<sup>1</sup> Charles C. Engel, Jr. 2004. Post-War Syndromes: Illustrating the Impact of the Social Psyche on Notions of Risk, Responsibility, Reason, and Remedy. *Journal of The American Academy of Psychoanalysis and Dynamic Psychiatry*, 32(2), 321–334, 2004

(IOM 1994).<sup>2</sup> But these studies were thought to be severely confounded by the fact that the veterans' exposure to Agent Orange occurred alongside their exposure to 'traumatic events' of war. Perhaps, since 'traumatic events' were already considered to be *bona fide* causal agent of PTSD, and because Veterans' Administration provided separate compensation for PTSD, it was perceived to be not productive to continue searching for the link between psychiatric disorder and Agent Orange. The study on neuropsychiatric effects of Agent Orange was severely confounded by the experience of war itself, because exposure to Agent Orange was also often accompanied by exposure to traumatic events (IOM 1994).

On the other hand, this separation of mental (trauma) versus physiological (Agent Orange) damages did not take the same shape in Vietnam as it did in the United States. This is not surprising, given different historical legacy in two countries. There were also many cases of mental or cognitive deficiencies among the children of people exposed to Agent Orange, and if these are attributed to the chemical, excluding adult psychiatric disorders from the effects of Agent Orange would have been too complicated.

As Dr. Minh said once, "here, everything is overlapped. No borders between the diseases, people...." In many parts of Vietnam like A Luoi, it was still difficult to base the Agent Orange disability payment on a precise medical diagnosis. The contour of 'Agent Orange victim' always blurred on the edge, slipping, sometimes, into the realm of spirits.

### ***Spiritual poison***

Vinh's family was full of Agent Orange victims. Vinh and his mother received Agent Orange disability from the government. Other than that, Vinh thought, his sister and his brother were also

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<sup>2</sup> Gregory P. Korgeski, Ph.D., and Gloria R. Leon, Ph.D. Correlates of Self-Reported and Objectively Determined Exposure to Agent Orange. *Am J Psychiatry* 140:11, November 1983

Agent Orange victims.

“My sister is like a monster,” said Vinh. “She has long dishevelled hair, which she never washes,” added Duc. “And when she looks at you, she looks as if she is looking away from you. She sometimes sleeps in the forest.”

His fourth brother also died of poison. He was born without any discernible defect in 1984 and he was healthy until the year he died.

One day he went into the forest, not deep in the mountains, but just behind the creek in the valley, and came back crazy and ‘paralyzed’. “He died within a year” said Duc. “That was in 1996. Now we call that forest the ‘forest of poison.’”

I imagined that somehow the chemicals must have got concentrated there. “We don’t go near it. We are afraid,” said Duc. “Remember last Sunday, when you called, I told you I was in the hills? I was in the hills with my friends. But on the way back I passed near the forest of poison. I became confused.” He batted his eyes and made a gesture as if he had gone crazy. “I was lost in the forest and I could not tell which way to go. I was lucky to be able to come back home.”

At the time I did not know that ‘land of poison’ did not necessarily mean poison from the chemicals used by the Americans, but could also mean places where bad spirits resided. With the spread of the discourse of Agent Orange, people’s memory of war seemed to be changing. Bich, a social science researcher from Hanoi noted that the ways in which people remembered their exposure to the chemicals during the war became a lot clearer now than a few years ago. In the past, people’s descriptions of their exposure to the chemicals were more blurry. But now, they seem to remember more vividly.



With the language of dioxins and Agent Orange, the talks of ghosts and spirits also seemed to be fading, as if they were driven away by the light of science, only to return at unsuspected moments to confuse the outsiders who were unaccustomed to see ghosts and chemicals in a single discourse.

### *Swine Bus*

The vehicle jolted as its wheel hit a pothole, and the air became filled with feathers and quacks of the panicking ducks and chickens above our head. The people of A Luoi jokingly called this bus, which brought us from Hue City up to A Luoi valley, *xe heo*, or the swine bus, owing to the fact that the merchandise it carried (which was often more than passengers) exuded various mismatching smells of their own, forming an exquisite ensemble of odours.

The swine bus was full of students on their way home from the city for Tet holiday. Many of them were of ethnic minority background. Nowadays, many minority students also went to Hue city or as far as Hanoi or Thanh Hoa for post-secondary education. Many of them went to schools with Kinh people, but there were also special programs designed exclusively for minority students in the city.

The route 49 leads us from Hue City through a windy ravine to A Luoi Valley in the midst of Truong Son Mountains. Sometimes you saw patches of bare earth on the hillsides along the ravine. In the 1990s, the Canadian scientists who came up here to conduct an environmental survey of the remaining effects of toxic chemicals from the wartime witnessed the evidence of the lasting effects the US herbicidal program still visible on these hillsides. The forests lost in the wartime were made difficult to recover by the tropical weather of the region, causing landslides in some places, and laterization of the soil in others.

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“They dug up barrels of chemicals there,” the accountant sitting on the seat in front of me was saying as I was coming out of a haphazard slumber on the buckling bus.

“That’s part of the hydroelectric plant,” the student who sat beside me explained, pointing to the hillside beyond, which showed strips of bare soil as if they were scratched by large claws. Apparently last year the hydro workers dug up five or six barrels containing chemicals left by the Americans in the hills.

The hydro dam projects were now in full-swing. You often encountered dump trucks carrying a full load of red soil down the route 14 southward toward Danang City. Since 2001, several state-led development projects like Program 135, a program to promote socioeconomic development in disadvantaged communities, were carried out here in A Luoi as well, bringing drastic changes to the living condition of the people. In the 1990s, few households in A Luoi had motorcycle or television. Now most household did. There was electricity and telephone in most communities along the newly repaved route 14, and many also used cellular phone. But the development also seems to have brought new risks and hazards. As the hydro dam projects dug up the earth, once in awhile they even dug up unexploded bombs buried deep beneath the surface, and people could hear, even as far as at the district centre, the echoes of bombs detonating in the hills.

In the 1980s, many people went into the hills in search of gold and scrap metals from war. The echoes of bombs detonating in the distance were also not an unusual part of their everyday soundscape in those days. Careless footsteps of the villagers, farmers’ unlucky hoe tips, or youths daring old bombs for scrap metal to raise enough money to go to school in the city: you would have heard later, the news of lost arms and legs. Now, there were a lot fewer injuries caused by undetected UXOs (unexploded ordinances), they said. In the late 1990s, the Vietnamese military sent specialists to clear the fields of landmines and bombs. There was also a public awareness campaign to discourage youths from fraternizing with bombs.

“Don’t make friend with bombs.”

With a cartoon figure of a schoolboy standing with an arm outstretched toward a bomb in a gesture of denial, the caption ran thus.

There were several billboards for government public announcements like this one standing on one corner of the T-junction where you left off Ho Chi Minh route to head toward Dong Son commune. Other posters had captions like: “Children are our future” and “Forests are gold; protect your forest”.

There were also public health boards on dioxins, like the one leaning against its scaffolding at the People’s Committee of Hong Thuong commune. It must have fallen from its place some time ago. Abandoned and forgotten, it lay at the edge of the courtyard among grasses which now grew all around it, brushing their blades against its wrinkled surface.

“Where does Agent Orange/dioxin come from?” it asked. “Chemicals sprayed by the US military during the war; Forest fire; Waste incineration below the temperature of 1000 C,” it answered. “Where does Agent Orange/dioxin accumulate?” it asked. “Animal tissues from contaminated areas, especially in fat and liver of chicken, duck, swan and fish....” It identified the ways in which people can get exposed to dioxin from Agent Orange and what the potential health effects can be. But no villagers passing by it now seem to take notice of it anymore. There were information boards like this in every commune in the past, they said. Now, most of them were gone. The one in Dong Son was blown away by the wind one year during the monsoon season. Huong Lam commune had lost theirs when they were rebuilding the People’s Committee building. They no longer needed it, they claimed, because everyone already knew what it said.

“Don’t eat duck fat, liver, or fish innards. Cook food thoroughly and boil water.” Mixed in with other public health campaigns, the locals could all recite how to avoid dioxin exposure like a piece of a gospel or a chant of a religious ritual. But whether people in A Luoi truly believed in these warnings or actually followed the advice of these messages, or how much these advises made sense to them was altogether different matter. How did the scientific discourse of Agent Orange and risk of dioxin affect the cognitive world of the people of A Luoi since the late 1990s?

Ulrich Beck (1994) noted that wide awareness of risk of technological hazard like chemicals and genetically modified foods are less pervasive in developing countries. It appeared this socialist country in a corner of Southeast Asia was not an exception. People led their lives with apparent nonchalance toward such risks including the risks of dioxin still embedded in their environment. But to say that such risks are irrelevant in developing countries seemed like a gross generalization. Depending on the geographical locations and family history, the local people’s perception of risk also varied. This chapter is an attempt to draw out this finer topography of risk perception in A Luoi.

### ***Chasing a Will-o-the-Wisp***

The visitors to Vietnam may imagine that the legacy of Agent Orange is a ubiquitous problem in South Vietnam. I also had such an illusion to a certain extent when I first arrived there. After all, in one estimate, almost one tenth of the landmass of South Vietnam was sprayed with the chemical herbicides during the war (see Chapter 4). But soon after I began my fieldwork, I realised that the ‘problem’ of Agent Orange was highly localised (at least in people’s mind).<sup>1</sup> In places like Hue

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<sup>1</sup> I say ‘problem’, because often it was not clear whether people were talking about the health effects of Agent Orange from past exposure or risk of contemporary exposure through environmental sources.

city, there were some veterans who were exposed to Agent Orange during the war and later developed cancers or other systemic diseases. But in the mind of the urbanites, most problems lied outside the city because the city itself was never sprayed with the chemicals during the war. There was a rumour among the foreigners in Hue City that the chemicals sprayed during the war in the mountains washed down the river and accumulated in the sediments at the lagoon near Thuan An, where many of the fish sold in the markets of Hue City came from. But I never heard any locals talk about that.

Typically, local Hue-ites pointed toward the mountains to the northwest, and said that *that* was where the problems of Agent Orange mainly lay. A Luoi and Nam Dong were the two mountain districts of Thua Thien Hue province where Agent Orange and its toxic contaminant, dioxin, was still thought to be a problem.<sup>2</sup> Once you came to A Luoi, however, you were told that dioxin was no longer a problem in most part of the valley. It was only at the southwest corner of the valley, where the former site of US A So airbase was, that people had to worry about the risk of exposure.

When I first arrived in A Luoi district, one rumour I kept on hearing was that the people living around A So airbase were actually new migrants. People called them by the name of “Dong Son”. This information surprised me. Hatfield Consultants produced many reports and publications on dioxin in A Luoi valley (Hatfield Consultants 1999, 2000; Dwernychuk et al 2005, etc.). But nowhere in their publications was this history of Dong Son mentioned.<sup>3</sup>

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<sup>2</sup> According to Hatfield (1999), Thua Thien Hue province was one of the three most heavily sprayed places (about 9% of all Agent Orange sprayed in Southern Vietnam was sprayed in Hue province), and one third of the spray missions took place in A Luoi district.

<sup>3</sup> According to an American expatriate who are familiar with the work of Hatfield Consultants, this all came from a small misunderstanding, a bit of carelessness and as a by-product of the division of labour among the scientists. Scientists from Hatfield Consultants were primarily environmental scientists with expertise and interests in environmental fate of toxic chemicals. They had experiences with measuring trace amounts of highly toxic chemicals like dioxins in water runoff from pulp mills, food chain analysis, and environmental pollution consultations. Their Vietnamese partners from 10-80 Committee (Chapter 1), on the other hand, were mostly medical doctors, whose

As already mentioned, the US A So airbase took its name from a Katu clan now belonging to Huong Lam commune, south of the airbase along the Ho Chi Minh route.<sup>4</sup> Now, the airbase itself lay within Dong Son commune. Dong Son, on the other hand, consisted of people from many places; many of them had lost their families and homes as a consequence of the war. Majority of the people in Dong Son resettled there between 1991 and 1993 from old Dong Son in Hong Thuy commune at the northeast corner of A Luoi district. They were later joined by Taoi people from Nham commune in the mountains and A Roang to the south. So here, at the heart of dioxin contamination in A Luoi valley, gathered an assortment of people with various histories and life trajectories. How did they come to live in a place so heavily contaminated with dioxins, and why did they stay when they found out that their new home was contaminated with poison?

### ***“Dong Son”***

When you look on the map of A Luoi Valley at the border region of Laos and Vietnam along the Truong Son mountain ranges, you would notice several geographical names that are duplicated. *Ra Mon, Ta Vai, Tru...*: these are the names of the people who were split and resettled once when the national border was consolidated in the 1970s, and once again when the provincial border was redrawn at the end of the 1980s. Each time, the ethnic minority people of Truong Son Mountains ‘followed the Party’ faithfully to find new dwellings and livelihood. For the people of Dong Son, their nomadic existence lasted until the beginning of the 1990s, when they finally arrived at the former site of the US A So airbase, which was left empty since the war, except for some local Katus braving the minefield of unexploded ordinances to graze cattle. Here, in this new

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interests lied with health effects of Agent Orange. The health aspect of their A Luoi research was primarily conducted by the Vietnamese scientists, which was later joined in by public health scientists from a Canadian University.

<sup>4</sup> See Chapter 4. In fact, during the war, Americans called the entire A Luoi Valley, Ashau or A So valley.

Dong Son commune, within five years of the settlement of Dong Son people, Hatfield scientists would discover a high level of dioxins remaining from the war, but this migration and duplications of geographical names confused the scientists into believing that the people of Dong Son had been living in the area surrounding the A So airbase for a long, long time.<sup>5</sup>

In Hong Thuy commune at the northern end of A Luoi district, the people of Dong Son were visitors with no land of their own. Dong Son people was originally located on the Laos side of the border, some 100 kilometres north of Hong Thuy commune along Xe Pong river. But when the national border (which was originally drawn up by the French) was consolidated after 1975, they decided to move over to the Vietnamese side of the border. After all, they had fought a long and hard war for this nation, and they expected that the government of Vietnam would now pay them back by helping them out with their life after the war. Since the end of the war, they were relocated three times, first to Vietnamese side of the border in Dakrong district in what is now Quang Tri province. Then, when Quang Tri Province and Thua Thien Hue province were split into two provinces (from Binh Tri Thien province) at the end of the 1980s, they were moved to Hong Thuy village in A Luoi district.<sup>6</sup> In both these places, people of Dong Son borrowed their land from other Paco people already living there. Finally in the 1990s, they were resettled to the present Dong Son,

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<sup>5</sup> This was why when the scientists took blood and breast milk samples to measure their dioxin content, they pooled together the samples only according to age and sex. The composite sample from men above 25 years of age contained 41 ppt TCDD dioxins. Men below 25 had 31 ppt. Women over 25 years of age showed 16 ppt, and women under 25 had 14 ppt TCDD dioxins in their blood. According to their study design, those above 25 years of age represented the people who might have been exposed to the chemicals during the war; the elevated dioxin level for people below 25 years of age represented post-war exposure. (control samples from Hong Van commune contained non-detectable amount to TCDD). The Hatfield study did indeed show what it purports to have shown: a modest conclusion that dioxin exposure continued after the war. But their report fails to note that this high dioxin level in tissue sample of people in Dong Son commune is likely to reflect their recent exposure after they moved to A So airbase area in 1992-93.

<sup>6</sup> Although this was what I understood when I heard the stories, it is possible that this second migration did not involve physical movement, but only a redrawing of border. Da Krong is the name of district that borders A Luoi district, but it is also the name of the district centre located about 100 km north of the border.



to the land which was supposed to become their own.

Toward the end of the 1980s, the province and the district brought a proposition to resettle the Dong Son people to A So, which was left empty after the Americans abandoned their airbase and the people of A So clan resettled further to the south. The government and the Party promised support.

The local Party leaders like Mr. Dung travelled to A So ahead of the others to survey the land. The land did not look very good: dry and hard, nothing but shrubs seemed to grow there. But the local Katus who had lived there before the war, swore that there were large trees growing there in the past. The land there was also flat and a creek, Trai creek, ran through it, which meant that it was suitable for paddy rice cultivation. Convinced that they can actually live there, Dung and the others returned to Hong Thuy, and began recruiting other villagers to move with them.

Once back in Hong Thuy, they discussed with the People's Committee and the village elders about this relocation. After they obtained their support, they visited each household persuading the villagers to relocate with them. Some decided to move; others decided to stay. Village elders of three villages, Api, Tru and Aro, decided to stay behind in Hong Thuy commune. "They did not understand deeply the reason for our participation in the revolution", said Dung, although he also realised that there were plenty of reasons to stay in Hong Thuy. Soil there was much better than in A So area. Crops grew on their own without fertilizers; fruit trees like bananas and papayas needed no care. In A So, on the other hand, there were no trees. Soil there was poor, consisting of alum soil and clay. It was an untested land, which had been used only sporadically for cattle grazing by the local Katu people since the war.

"A So was a place of great sacrifice," as Dung said, many of their comrades died there in

their effort to recapture A So airbase during the war, which was critical for gaining control over A Luoi valley. Now, it was a historical heritage site that required tending. “It is also a border zone” that needed protection, Dung explained.<sup>7</sup> “But it wasn’t just about the sacrifice of the dead, but *our* sacrifice for *our* children.” Those who moved with them, thus held onto the spirit of the Revolution. Paddy rice cultivation, fertilizers and pesticides: everything was new, but the people of Dong Son bore this challenge, believing in the fact that their sacrifice made now would bring benefits for the future generations to come.

“Living in Hong Thuy was difficult, too.” The basin of A Sap River that ran through the length of A Luoi Valley narrowed to a V-shaped valley near Hong Thuy. Steep hills ranged one over the other like imbrications on both sides of the valley, and as the fields became exhausted nearby, it drew them further and further away from the only road that ran along the valley and connected them to the district centre. There was also an increasing pressure for sedentarization by the Central Government; slash-and-burn style swidden agriculture was becoming less and less acceptable in modern Vietnam. But in Hong Thuy commune, there were few lands suitable for paddy rice cultivation. With the region becoming increasingly crowded, they “needed to use scientific technology” to increase production rate per area of the land use in order to feed everyone.

Their new life in new Dong Son was certainly very difficult. Malnutrition was commonplace when they first arrived there; many babies died or suffered from permanent disabilities due to malnutrition and poor hygiene during infancy. This was the time before the Canadians came, so they did not know about dioxin.

Then in the mid-1990s, a group of foreign NGOs and Vietnamese government projects began

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<sup>7</sup> Although I have not heard any news contestation over this border between Laos and Vietnam.

to come up to Dong Son to help them raise their standard of life.<sup>8</sup>

Before then, there were people who found their life in new Dong Son too hard, and returned to Hong Thuy. But after seeing the people from a rich country like Japan coming to help them, they believed then that their life will improve. In reality, their standard of life has improved a lot. Of course, it's not like in the district centre yet. But I'm sure they see that their life has improved.

Their move to this poisoned land was a right choice. By the time the result of the study by Canadians and 10-80 Committee was out, showing that their environment was contaminated with toxic chemicals, in face of indeterminate risk now they became aware of, they nonetheless felt that they had invested too much in their life in Dong Son to leave.

"Are there any families that left here after they found out about the chemicals?" I asked Dung.

"No," Dung replied pensively after a pause. "To tell you the truth, the chemicals here is something that exist in other places too. But this is the centre. Because it wasn't just A So. In A Luoi and Laos, where we were, airplanes came and sprayed the chemicals there too."

People of Dong Son and its neighbouring Huong Lam commune often spoke about how they were all already exposed to the chemicals.

"After the project," Dr. Phuong, a physician from A So village said, "we tried to tell people not to eat duck innards, fish fat, and so on. But people still eat them. And the water, water from the streams is better than the water from the wells, a little bit. People know a bit more than before. But we all had been drinking well-water for a long time. There was no running water before. We didn't know about how well-water had more chemicals. So we've been drinking it for a long time. Now

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<sup>8</sup> One of the groups was a Japanese group who came to help them build a road. It was a dirt road, but a road nonetheless. They also bought cattle for the villagers. They spoke no Vietnamese, but they spent some time there with the locals, eating, dancing, singing and working, which moved the local people. When they left, they hugged and cried with the local people, Dung recalled with an inordinate fondness.

it's in our body already. We already have the chemicals in our body.”

The reason why they led their life seemingly oblivious to the risk of poisonous chemicals that contaminated their environment, it appeared, was a mixture of a bit of fatalism, a bit of disdain, and a bit of realism about this poison, which they had lived with without any knowledge of it for many decades. There was no point in worrying about the risk of dioxin, which had already contaminated them. If the danger is remote or if it stem from an isolated event, people are able to recognize it and mobilize against it; but if the danger becomes ubiquitous and all-encompassing, people tend to forget about it. Is this how it is?

### ***Trace Chemistry of Fire***

“Dioxins Have Been Present since the Advent of Fire, Says Dow”, back in the 1970s across the ocean in the United States, new evidence was gathering indicating that the dioxin was a ubiquitous substance, not exclusively produced in chemical factories, but through natural processes as well (Smith 1978). In 1977, scientists at Dow Chemical Company detected dioxins in fish from Tittabawasee River to which Dow poured its waste water. Among the dioxins discovered in it were TCDD. This caused a serious concern within the company. That they may have been spilling this highly toxic substance into the environment worried the Dow officials; the potential repercussion was alarming. Upon notification from Dow, the Michigan Department of Natural Resource issued a warning against eating fish from that river. The company's fear that one of the agencies like US Environmental Protection Agency might shut down the plant became a real concern.

In order to exercise ‘good citizenship’, Dow scientists decided to ascertain the extent of dioxin contamination in the vicinity of the plant. Dow had one of the best analytical methods for

detecting dioxins at the time. It involved a cleanup of chemicals using liquid chromatography followed by gas chromatography mass spectrometry (Bumb et al 1980). At the time of the publication of Dow's report in 1980, this technology allowed them to measure TCDD isomers at the concentration of as small as 1-10 parts per trillion. This measuring technology would eventually become the gold standard for exposure assessment for any scientists researching dioxins.

In 1978, Dow scientists found between 300 parts per trillion (ppt) to 20,500,000 ppt of dioxins in the soil from the factory compound. But they did not stop there. They then went on to test samples from other metropolitan areas in order to obtain a control. Their findings were astonishing. They found that dioxins were present in pretty much everything from auto mufflers to delicious charcoal-grilled steaks! If they found a trace amount of dioxin in fish from Tittabawassee River, perhaps, it wasn't Dow's fault then; the entire environment was to be blamed!

Dow officials went to the press, declaring it a "key scientific breakthrough" in the *trace chemistry of fire hypothesis*. This led to a series of research in the 1980s which claimed that natural combustions like forest fires may potentially be a significant or even the main source of dioxin present in the environment today. What followed was a familiar argument. Ronald Kagel from Dow even stated it bluntly: "Because dioxins are ubiquitous, we need not be concerned about them" (Smith 1978).

That would have deflated EPA's crusade to ban 2,4,5-T in the 1970s, perhaps, not to mention its interest in placing zero effluent limit for dioxins. In reality, the trace chemistry of fire hypothesis did not save 2,4,5-T from regulation for too long. After the accident at Seveso, Love Canal and Time Beach, in which the fear of dioxin was widely publicized, the political stake was

already too high to ignore. In 1979, therefore, US EPA went on to ban 2,4,5-T for most domestic use. By the end of the 1980s, several studies had been published repudiating the trace chemistry of fire hypothesis (Schechter 1988, Tong et al 1990), and the US EPA would place the world's most stringent restriction on dioxins. Unlike in A Luoi, therefore, in the United States, the ubiquity of dioxin was forgotten, and dioxin came to be known as the quintessential poison, one of the symbols of corporate crime in polluting the earth.

### ***Heart of Poison***

In *Poison Stronger than Love*, Anastasia Shkilnyk (1985) described how the community of Ojibwa in Grassy Narrows seemed to be on the verge of a collapse under the double pressure from the loss of traditional lifestyle due to resettlement and mercury contamination of the lake. The relocation of the community to the reservation of Grassy Narrows and the loss of traditional livelihood as a result of it presented an enormous psychological pressure on the people of this Ojibwa community. On top of all these changes, the news that mercury poisoning of the lake posed risks to community health, exacerbated the sense of doom and hopelessness of the community members. For me, this story and others like it (Ishimure's (2004) Minamata, Reich's (1991) multi-sited research, Whiteside's (1979) Seveso, Petryna's (2002) Chernobyl, Das' (1996) Bhopal) had prefigured the expectations and imagination for my own fieldwork in Vietnam. But I found no comparable situation there. Destitution, hopelessness, or the destruction of the community that Shkilnyk saw in Grassy Narrows did not seem to exist in Dong Son commune.

"Ethnic people here don't worry about it unless it kills you tomorrow," as several villagers had told me, faced with an imminent threat they now knew they lived with, people of Dong Son seemed to remain impassable—deceptively jovial. Youths often made jokes about Agent Orange.

They liked to share their knowledge about this toxic chemical like a novelty they also found fascinating. Like one of the lessons learnt at school, people spoke with apparent detachment about the knowledge of this risk of dioxin that contaminated their new home. As if chasing a will-o'-the-wisp, at the heart of poisoned land, the risk of dioxin seemed to become innocuous thing in the consciousness of people in Dong Son.

In her study on Mexican migrant farm workers in California, Barbara Harthorn (2003) found that the workers with greater chemical exposure tended to downplay the risk of chemicals in their discourse. Excessive fear of ubiquitous risk can paralyze them in leading their everyday life.<sup>9</sup> Faced with unavoidable risks of chemicals, the workers chose “self-protective denial” of risk to their health. Meanwhile, they expressed concerns about non-specific risks to the community at large, or to their children.

People living near the dioxin hotspots in A Luoi also seemed to express this ‘self-protective denial.’ True. I sometimes noticed that some of the children were not eating fish or poultry. But the adults, especially men, ate these ‘forbidden’ food items without any reservation even in Dong Son. Fish innards sautéed in oil with herbs from the hills, or duck liver minced and sautéed with onions was a great companion to go with drinking rice wine. A Luoi, after all, was their home, and there was no escape from the chemicals that poisoned their land and themselves.

Knowledge was sometimes dangerous. One time I asked a group of young men gathered at Duc’s house, whether they would use ultrasound prenatal screening when their wife is pregnant.

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<sup>9</sup> Risks fall upon us indiscriminately, everywhere, saturating our environment with the essence of fear. But instead of wallowing in, what Jacques Donzelot has described as, the world “rendered uninhabitable by fear”? (in Massumi 1993: 23), people of A Luoi tended to disregard the fear of risks. Fear can incite action, paranoiac rage giving rise to spontaneous mass uprising; but it could also immobilize us. Some scholars (Massumi 1993) have invoked the discourse of ‘trauma’ as a metaphor, arguing how chronic exposure to fear might numb our senses to ever present dangers.

One of the guys said: “I will be more afraid if I went to get the ultrasound. Doctors might say whatever, and you’d just get more afraid. Of course, we are worried, living in a place like this. But we’ll be more afraid if we went to get ultrasound.” Ignorance was a bliss, even if they knew that it was an ignorance wilfully chosen.

There was always a danger of taking the informants’ words at face value. Sarcasm lost in translation; nervousness expressed in laughter; or cultural proclivity that dissuades some people from complaining: all these factors may mask grief, remorse and anxiety that swirled behind their smiling faces. But, of course, I could not tell for sure.<sup>10</sup>

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“Is the story of Dong Son interesting?” Mr. Dung suddenly turned around and asked me toward the end of our interview.

“Yes.... But a little bit tragic,” I said, not knowing what else to say.

“Yes, this area is contaminated with the chemicals. But we began to develop, and our pride is that we are the people of the Revolution. And this is a place of great sacrifice. But no one was here to take care of it. It had turned into a deserted land. You need someone to keep that memory alive. That is our duty. With the chemicals, we need the aid of the foreign NGOs and the government. But the soil, the clay, alum: that we can slowly improve. With Agent Orange, we need outside aid. That is our wish. Not just the wish of Dong Son, but of all the ethnic minorities in A Luoi.”

Since the study by Hatfield, Dong Son has received several government projects and foreign NGOs which had brought aid to them in order to improve their standard of living. The stigma and

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<sup>10</sup> Inspired by the work of sociologist, Kai Erikson (1976) on psychological trauma after toxic dump spillage at Buffalo Creek in New York, I secretly expected to study the psychological trauma in A Luoi valley as a result of Agent Orange poisoning and war. But the reality I found there turned out to be quite different.



risk of contamination, it seemed, could also be turned into a source of pride for their sacrifice for the nation, and the resource for financial aid they expected in return.

### ***Topography of Risk***

Throughout my fieldwork in A Luoi, I was often perplexed by how risk of environmental contamination was often downplayed by the locals. As if risk was imperceptible without undulation in the topography of poison, people's perception of risk became more detailed as you approached the localities identified as having high level of residual dioxin from the war.<sup>11</sup> In Hue, people pointed to A Luoi valley as the place of risk. Once in A Luoi, people pointed at Dong Son/Huong Lam region as the place of contamination. And in Dong Son and Huong Lam, people pointed at the barren land that lay between them, in particular, the fenced off section of the former airbase site. As if generalised and ubiquitous risks numbed their senses that alerted them against these risks, people sought places of greater risks to be contrasted to their 'safer' environment. Yet, at the same time, what was puzzling was that even the same individuals who displayed complete disdain about risk of dioxin to themselves at one moment could sometimes suddenly turn around and mention the 'problem of chemicals'.

### ***Quynh Loc***

It was sometime in the spring of 2009. I was visiting Quynh Loc at Dong Son to ask him about the history of this region in more detail. We were wrapping up our interview, and I confided to Quynh Loc that I did not quite understand what people meant when they said they knew or did not know about "*chat doc*" and its health effects. When they said 'chat doc' people usually meant

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<sup>11</sup> See also the work of Bryan Wynn (1996) and Teresa Satterfield (2003), who write that local people have more detailed view on where the toxic chemicals or radioactive fallout might have fallen.

Agent Orange, rather than ‘doc’, which they used to refer to poisons they used traditionally, or some acts of bad spirits—that much, I have come to understand (Chapter 7). The question about when people in A Luoi first came to know about the toxic effects of Agent Orange was still confusing. Many people claimed that they did not know about it until the 1990s, or until foreign scientists came to do their research in Dong Son, to be more precise. Some even said that it was only after the year 2000.

There were also others who said that people knew about it since the time of the war. Older people who fought in the war remembered how mist of toxic chemicals filled the air all around them. How it stung their eyes, how they were told to cover their mouth with wet towels, how some people felt nauseous, headache and sometimes even vomited, and how some people became unable to walk after a few days. Some told me that people could even die as a result of their exposure to the chemicals.

Granted, memory plays tricks. What they remembered about the immediate effects of direct exposure to the chemical herbicides can be contaminated with the knowledge of the present, highlighting the experiences that resembled symptoms of toxic effects. But what about their latent effects like cancer and birth defects, or the poisoning through food chain? Were they able to associate illnesses emerging years after the war to the chemicals sprayed during the war? I was puzzled because while in earlier interviews, people said they came to know about it at the end of the 1990s, lately I was hearing people say that they knew it all along, although I had not pushed for details.

“They might say that, but no. They didn’t know,” Quynh Loc said. “If they knew, they wouldn’t have kept on eating fish fat and duck livers, and so on, would they?” he reasoned. For

Quynh Loc ‘to know’ about ‘*chat doc*’ meant not only to know the etiology of diseases associated with Agent Orange in abstracts; it also meant to know about its risks and act in accordance with that knowledge. Etiological knowledge had very little practical implication in everyday life. The knowledge of risk, on the other hand, could be practical knowledge that had use in the present.<sup>12</sup> These knowledges were purportedly connected by the theory of causation.

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Seeing that we were more or less finished with the interview, Quynh Loc’s wife brought us a bottle of rice wine and some snacks to go with it.

“Ah, now here is something you don’t want to eat,” Quynh Loc giggled humorously pointing at one of the dishes that contained something brown and green.

“What is it?”

“Oh, it’s fish innards cooked with herbs from the hills,” answered Duc with a smile. “Great snack to go with drinks. But maybe you shouldn’t eat it since you aren’t here for very long. We are used to it.”

I chuckled, too. I appreciated that he excused me from eating it, but the reason for the humour was clear. Fish innards was one of the things the People’s Committee advise them not to eat because of the risk of dioxin contamination. Dioxins often accumulated in fatty tissues like liver and fat of duck and fish. But we all knew that the local people ate it anyway, saying “it’s too good to let it go to waste,” or “we don’t worry about it unless it would kill you right away.”

There was more to ‘knowing about Agent Orange’ than to act accordingly to that knowledge, even if this knowledge was about risk now present in their environment. To focus only on

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<sup>12</sup> Although it seemed to me that to come to the knowledge about the poison that had compromised their health in the past is not exactly the same as to know about the risk of exposure in the present, I was still impressed with Quynh Loc’s pragmatic definition of ‘knowing’.

articulated perception of risks or the actions taken in order to reduce risks, therefore, would be to neglect the diffused and sub-threshold fear and the inkling suspicion that may still have their bearing on everyday life.

### ***Risk Perception***

Most social scientists see ‘risk’ as something ‘socially constructed’ to some degree or another. What they mean by this is that the modern risk is not just an objective danger existing in nature, not simply something ‘out there’, but something that is made to ‘reveal’ through various medical technology, professional knowledge and cultural and political utility of such risk-knowledge. The empirical reality of risk is in the “virtual domain of latency, invisibility and contingency” (Adam and Van Loon 2000: 2), and because our untrained senses fail us in their detection, risks call for the necessity of technical/professional knowledge to come to be. But risk was not only limited or revealed through technological capacity.

Mary Douglas and Aaron Wildavsky (1983) argued that risks are related to politics, accountability and blame. Where blame exists, risk persists. Like the idea of taboos and sins, ‘risk’ plays a role in social control. Excluding the danger that lies without, suppressing the sources of dissensus within, risk lends its hand in constructing group solidarity. Often used in a ‘forensic’ manner in a post-disaster imputation of accountability in court, risk is a cultural response to ‘transgression’: a way to deal with otherness, to safeguard the moral order of the community and its own particular vision of what a ‘good life’ constitutes (Douglas 1993/90). Risk perception, therefore, has a tendency to manifest itself as a xenophobic suspicion of the unfamiliar (Lupton 1999: 48).

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It was several months after I began commuting to Dong Son for my research. I had made it my habit to bring some groceries bought at the market in the district centre to share with my research assistant Duc's family, whenever I went to Dong Son. But after several months, Duc told me that people of Dong Son did not usually eat fruits and vegetables bought at the district centre. He said that they are often treated with chemicals.

"See how clean it is!" he said, looking at the watermelon I brought for them. "Often they are rotten inside, but they look super nice on the outside. That's because they put so much chemicals before transporting them from China." People who knew of risk of eating duck innards, but still ate them because they were too tasty to waste them, found vegetables bought from the markets to be dangerous (although that did not mean that they would not eat it).

As Douglas argued, virtually anything can turn into a source of risk, so the objective reality of risk as scientists might see it is of little importance in understanding what laypeople may think of a particular risk. What we see as risk is conditioned by our cultural and moral values. In contemporary A Luoi, the discourse of dioxin and Agent Orange seems to have made the people of Dong Son more aware of risk of chemical pesticides in general, even though they did not seem to let their fear of dioxin take over their life.

### ***Victims and the Victims of Risks***

Since the 1990s, risk has become a fashionable topic of research in social science.<sup>13</sup> But

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<sup>13</sup> Ulrich Beck's (1992) *Risk Society* which originally came out in 1986 was fed on by the images of global scale apocalypses. By then, the planet earth had experienced several show-case toxic disasters. We recall names like Hiroshima, Agent Orange in Vietnam, Bhopal, Seveso, and Chernobyl. Each time these technologically induced disasters struck us, they left behind not only poisoned bodies that continued to suffer, but also fear—the fear of further disasters in the future.

Coming through the wreckage of these technological disasters, Beck contended that the awareness of 'risk' has become such a pervasive theme in the present travail, that it has come to alter the nature of industrial Modernity. Modernity, premised upon the promise of perpetual progress, was exposed as a lie. We now witness the pitfalls of technological progress—the 'dystopic' face of Modernity, so to speak—in the abundance of risks that techno-science

curiously, these studies rarely mention the relationship between risk perception and the ontological status of ‘victims’ who suffer from the effects of hazard foretold by the risk pronouncement.<sup>14</sup>

Ordinarily, risk postulates a potential harm through the knowledge about the present condition. Yet, these hazards and risks are not related in a simple cause-and-effect manner. In a sense, some might argue, it is a mistake to say that ‘a risk is *manifested* in a hazard’, as if hazards are the direct consequences of the process already in progress when risks were postulated. There are risks that never come true; there are hazards that strike us unsuspected. Risks and hazards seem to be ontologically discontinuous. Risk exists in a virtual sense, while hazards are experienced with certainty (see Van Loon 2002). However, this binary of risk and hazard, virtuality and certainty does not hold in the final analysis. The virtuality of risk contaminates the certainty of hazard, whose etiology is often spoken in terms of ‘risk factor’ under the current scientific paradigm of epidemiology.

Once one is diagnosed with a disease, a cascade of risks opens up to one’s vista; the diagnosis of a cancer may draw attention to further risks of metastasis and death, or expose the patient to other types of iatrogenic risks through therapeutic interventions such as chemotherapy and radiotherapy. But it is not only that new risks emerge; a *specific* patient also becomes an embodiment of *general* risk. To be diagnosed with diseases whose causes are of importance to the society is to become part of a statistics: to become an anonymous member that constitutes the risk postulates. This process, however, does not necessarily lead to the identification of *specific* causation for the individual in question. Say, the so-called victims of Agent Orange. As I already mentioned, because the diseases thought to be associated with Agent Orange and dioxin, such as

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has manufactured. You see risk everywhere, from distant nuclear power plants to appliances in your kitchen; from multinational agro-chemical corporations to food on your plate. The living has become a risky business.

<sup>14</sup> See Appendix 8 for the discussion on the skewed relationship between risk and disaster.

various forms of cancers (Hodgkin's lymphoma, soft tissue sarcoma, etc), neurodegenerative disease (Parkinson's diseases) and birth defects (spina bifida, hydrocephaly, Siamese twins), also exist among the general population unexposed to the chemicals, the fact that an individual has developed one of these diseases does not necessarily mean that it was caused by dioxin. If, for instance, the incident rate of disease X in the exposed population is 4 out of 1000, and general population is 2 out of 1000, one might say that the exposure doubled the rate of disease X; but one cannot say which two of four cases among exposed population are actually caused by the exposure. In other words, he or she becomes a spectral presence upon which a *general* risk of exposed population is founded; but scientifically speaking, individual causation remains uncertain. Thus, the logical consequence of believing that someone is a victim of Agent Orange is also to believe in the risk of Agent Orange (or dioxin) in general.

This perceived risk of dioxin in areas contaminated with Agent Orange in Vietnam is bifurcated. On the one hand there is a risk of contemporary exposure through the environment. On the other, there is an embodied risk from historical exposure and the damaged body (gene). The denial of one does not necessarily entail the denial of the other. In contemporary A Luoi, the latter theory (historical risk) is accepted more readily than the former. Many of the older ethnic minority people were exposed to the chemicals during the war. Only in rare cases (like that of Quang in Chapter 2) did environmentally mediated causation offer itself as the only explanation for their conditions. Perhaps this allowed the people to affirm the suffering of the victims while continuing to live oblivious to the risk of environmental exposure to dioxins. And yet, there were also some family members of 'Agent Orange victims' who spoke bitterly about how their neighbours did not believe that their disabilities were indeed due to Agent Orange. While the recognition of victims'

source of strife may bring material aid and attention to victims, people who lived with this risk had little to gain from that awareness of risk. Loss for people found to be at risk, however, was not insignificant.<sup>15</sup> The presence of the victim in a family was a reminder of their poisoned bodies and the risk they all bore, which spilled over the boundary of the family to their neighbours in the community. Furthermore, its effects and the ill-fame it brought to the region affected the commerce of the region, especially for people like the owners of guesthouses and restaurants who relied on visitors' for their livelihood.

### ***Conclusion***

People's perception of risk certainly had something to do with individual personality, personal history, occupations, and the geographical location where they lived, and so on. But the sense of risk also had a relational element, erupting in certain encounters, under certain context *vis-à-vis* particular interlocutors.

Here is my generalised hypothesis on people's perception of risks of dioxin in A Luoi. When one believes that the state of un-contamination is his or her norm (such as the people from the lowlands), one reacts with excessive vigilance against perception of near-risk (like being in A

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<sup>15</sup> Let me give you an example from Japan. In the 1954, Daigofukuryu-maru, a trolley ship fishing tuna in the Pacific ocean near Marshal Islands was exposed to nuclear fallout from the Bravo nuclear weapons test. Upon their return to Japan, they immediately became the centre of attention. Saying, 'Yet again, Japanese became the victims of American nuclear weapon', mass media, political parties, lawyers and activists all gathered, expressing sympathy and solidarity with the crews. They all wanted to hear the crews' story. They became the icon of anti-nuclear weapon movement in Japan.

Then the crews of Daigofukuryu-maru suddenly fell silent.

As the news of nuclear testing in the Pacific Islands spread, the concern for possible contamination of fish became imminent. Many tons of tuna caught in the water near Pacific Islands had to be dumped for food-safety reason, causing millions of dollars of loss for other fishing industry in Japan. Sympathy for the crew of Daigofukuryu-maru turned to envy and jealousy, then to anger for the VIP treatment they were receiving while other fishermen received only meagre compensation for their loss. This story gave me a cause to wonder if people now seen to be 'at risk' due to exposure to dioxin (contemporary and historical) did not hold grudge against the victims of Agent Orange who brought ill fame and worry to them, and benefiting themselves, while the non-victims received nothing.



Luoi). Finer distinctions within the geographical areas in the zones of potential risk such as the differences within A Luoi are ignored as superfluous. Prudence demands setting a wider demarcation of risk to be on the safer side, and this boundary tend to coincide with recognizable names, such as 'A So', 'Dong Son', 'A Luoi', or even 'Vietnam'.

When one lives in a stigmatized land associated with contamination, it leads to two distinctive responses. In A Luoi, I found that those who lived further away from the epicentre of the risk (like those living in the district centre of A Luoi) tended to downplay the risk by externalising or localizing its danger. These are *geographical risks*. People believed that it is safe as long as they do not approach more narrowly defined sites of contamination (i.e. the hotspots). Any health effects attributed to dioxins that they have witnessed around them are thought to be from the direct exposure to the herbicides during the war. The risks that still threatened them or their neighbours, in these cases, are *historical risks* or *inherited risks*. In my fieldwork, I found that people did not talk about genetics per se, but they talked about how, because their parents or grandparents were exposed during the war, they also held this poison in their body, or something in their body has changed such that its effects can be manifested much later. While some believed in these historical or inherited risks, most people believed that no contamination occurs in their everyday life.

Once you got closer to the epicentre of dioxin contamination (such as A So airbase), however, people talked about the risk of poison in their environment. Those who lived in the close vicinity of the epicentre of the risk (hotspot) tended to believe that they were already contaminated. While recognizing this risk and blaming most illnesses on this poison, they nonetheless took very little actions to prevent it or mobilized to protest against it. The logic went that since they were already contaminated, precautionary measures against further contamination were considered superfluous,

(especially when it entailed letting good food go to waste). They also tended to generalise the risk to greater geographical locations such as A Luoi district, and spoke about danger to lie on a continuum of risk, their own land being at its centre of this risk, or a prototypical example, but not a unique case.

When people claimed to an outsider that they were not concerned about the risk of dioxin, I believe that they were genuinely not concerned about it, even if at other times they might feel like many problems they saw around them were caused by it. This relational element was also important for outsiders like us. Sometimes, putting the lid on that vortex of risk and feigning normalcy was required, for instance, when visitors are invited to have food and drink in Dong Son.<sup>16</sup> The question was how such sub-threshold level of fear and resentment affected people in the everyday life.<sup>17</sup> In order to understand how perceptions of risk are demanded, performed and negotiated in the encounters and frictions (Tsing 2005) between various people of A Luoi and their visitors, we need to go beyond the realm of risk discourse and glean the ramification of this knowledge on people's everyday life, social relationship, and resentments.

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<sup>16</sup> Following the nuclear disaster in Fukushima, Japan, for example, one farmer who lived in the vicinity of the plant (but outside the perimeter of immediate danger) posted on Twitter: "We don't want compensation [for spoiled agricultural products]. Please buy our products". In a sense, it was a plea to save what they tended and grew with care, but it was also an attempt to reinstitute normalcy by taking advantage of the political climate in which disagreement with victims' desire was a taboo subject.

<sup>17</sup> In the context of a discussion on social suffering, Veena Das asks, "how does one *not* simply articulate loss through a dramatic gesture of defiance but learn to inhabit the world, or inhabit it again, in a gesture of mourning?" (Das 2000: 208). In our study of risk perception, we also need to pay attention to the ethical dimension of risk that emerges in personal relationship.

## CHAPTER 9 ANOTHER GHOST OF WAR

*Summer 2008*—there was a rumour that the search for MIA, the American soldiers missing in action during the war, still continued in A Luoi Valley. Each summer, the locals saw a caravan of white SUVs driving up that winding road from Hue at dawn, bringing a team of American forensics. A Luoi was one of the fiercest battlefields during the war, and many American soldiers also perished in the jungles along with the Vietnamese and the ethnic minorities of A Luoi. Almost half a century later, American forensic teams consisting of archaeologists and a few marines still entered the forest in search of the remains of the fallen soldiers, or any traces of their possible predicament. A broken watch buried in the soil. A metal dog tag wrapped around a phalange. Sometimes, they even discovered the skeleton of an entire person. Once identified, these remains would be returned to their family, bringing some sort of closure to those who waited their news for four decades.<sup>1</sup>

At the end of each day, the Americans always returned to Hue City, back the same route they came up in the morning, and returned at dawn the next morning once again.<sup>2</sup> Each passage took two to three hours by car. Not exactly a short ride; but there was no lodging suitable for the Americans up in A Luoi valley, my landlord said. The Vietnamese officials who accompanied their work stayed up in the highland valley to avoid the car ride.

Years ago when the MIA team first began to appear in A Luoi, the Americans often encountered hostile locals who would hurl stones and insults at them. “They were afraid,” Old

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<sup>1</sup> This information came from the MIA team I met in the summer of 2009.

<sup>2</sup> This practice continued until the summer of 2009, when the Americans also began stay at the guest house I was staying at. The group consisted of an archaeologist and half a dozen young soldiers. They all looked like hardy bunch who would think nothing of sleeping on a jungle floor, not to mention the local guesthouses in A Luoi, which had all the amenities one could ask. The Vietnamese explanation that the lodging in A Luoi was not ‘suitable’ for the Americans has to be reconsidered in this light. But this story comes from the year before, in the summer of 2008.

Quynh Dung laughed. “They thought that Americans have come back to attack them again! One time, this old man in Hong Nguyen got so afraid when he saw an American helicopter flying overhead that he took his rifle and shot at it.”

This was why, in principle, all foreigners visiting this region were still to be accompanied by people like Van and Sang from the Vietnamese authority in order to ensure their safe passage through unfriendly terrains. In a sense, I was no exception during my fieldwork in A Luoi, although things were getting a bit lax of late, so I could sometimes travel on my own.

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Passing of time or a proper ritual may provide a certain closure to memory of war, hatred and anger toward previous enemies, or remorse and longing for missing ones. In contrast, the objective presence of toxic substance seemed to make the ‘memory of Agent Orange’, or the risks and hazards it entailed, impervious to human intervention. The arrival of Canadian scientists in A Luoi in the 1990s marked a reopening of the issue, bringing new life to the poison which until then lied hidden in the landscape and the bodies of the people of A Luoi unbeknownst to themselves. This chapter continues with the story of how this new knowledge has affected the life of the people in A Luoi in relation to their visitors to A Luoi like Van and Sang.

### ***Hostile Landscape***

They would go up the mountains with the team of Americans, enter the depth of the primeval forest that even the local people have not ventured for years. The nature was not so gentle. There were leaches that would suck your blood unaware by the host until they would burst from their own gluttony. There were snakes of all colours. ‘The more colourful, the more deadly,’ they were

told. And all these natural dangers were dotted with even fatal danger of manmade UXOs (unexploded ordinances).

In the midst of such hostile nature, sometimes they would come across a spot of relief. Maybe a stream gathering fresh cold water from mountain tops. Or a pond, perhaps, with water so clear, the little transparent fish would swim among the clouds reflected on its surface. Van remembered diving into one of these ponds, unable to resist the promise of coolness after all the sweaty work of digging and crawling for the Americans. The water was cool to his skin. Refreshing.

That night, Van woke up from a dream with a hammering headache. In his dream, he was alone on a boat floating in the ocean. There was no land in sight. His head was burning from the blazing sun. In his delirium, he realised that he was coming up with a fever. The next morning, when he woke up again, he was taken to see a doctor. Malaria was the diagnosis.

Malaria was an endemic problem in these parts of the nation ever since the war. Dr. Đặng Văn Ngữ, a renowned scientist and a physician was killed in the American B-52 bombing while he was researching for the way to reduce casualty due to malaria in A Luoi valley. Malaria, some locals said, was particularly bad immediately after Americans sprayed the chemicals. The defoliated forests left many standing waters where mosquitoes could lay their eggs. Scientists also suggested that the chemicals reduced the immunity of the people exposed to it, such that they became more susceptible to infectious diseases like malaria.

Around the turn of the century, the incidents of malaria in A Luoi decreased markedly, thanks to the state-led malaria eradication campaign. The local medical aides went around the communes teaching the people how malaria was transmitted through mosquitoes; the specialists came from the city to spray the walls of their houses with chemicals. Even now, medical officers from Hue

came around the villages twice a year, bringing bottles of FENDONA provided by the World Health Organization. The villagers would gather around a water duct or a well to soak their mosquito nets in pesticide.

Nowadays, people said, the only time anybody got malaria was when they went deep into the woods. In the 1980s, when everybody got malaria, the only locally available remedy at the time was a brew made of boiled earth worms. The youths of Dong Son like my research assistant Duc and his friends all remembered and spoke animatedly about how their parents shoved this disgusting liquid down their throat in their childhood. Thankfully, they hadn't had to take this 'medicine' for a long time, they said.

The dramatic decline in the incidents of malaria was accompanied by the rise in the level of pesticides now deposited in their environment and their bodies. When Hatfield scientists conducted their research in A Luoi, they found high level of DDT in breast milk of women in Dong Son (Hatfield 2000: 2/45). The low ratio of DDE (DDT's derivative as it decays) to DDT meant that their exposure to DDT was recent, likely from malaria eradication campaign in the 1990s. The daily intake of DDT for infants fed on breast milk in Dong Son was calculated to be twice as high as that of tolerable daily intake standard set by the Health Canada.<sup>3</sup> But nobody in Dong Son mentioned the risk of DDT to me during my fieldwork.<sup>4</sup>

There was also conflicting information regarding the use of agricultural pesticides in Dong Son and its neighbouring Huong Lam commune. I have witnessed several men spraying the fields after the planting in the late spring. The local shop did carry pesticides in small packets, and I have

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<sup>3</sup> Somehow the level of DDT in Dong Son was a lot higher than that in other communes like Huong Lam and Hong Thuong. It is possible that because Dong Son was a new settlement, malaria eradication program did not start until more recently.

<sup>4</sup> This research was conducted in the 90s, so the level of DDT may be a lot lower by the end of the 2000s.

come across plastic spray bottles for pesticide lying casually at the back of the villagers' houses that I visited. But when I asked them about pesticide use, they almost unanimously told me that people there rarely used pesticides. "How can we afford it?" they said, as if they had decided communally before hand that speaking about pesticide to the outsiders was a problem.<sup>5</sup>

### ***Outsiders and Risk***

"I'm telling you. Malaria can go into your body through pores on your head," said Van. "Directly, without any mosquitoes. You should never swim in ponds with fallen leaves." Van roughed up his own head, showing the pores on his scalp as he told this story to a Japanese student he met at the café, as if the skin became more porous and vulnerable to external dangers in this mountain valley unfamiliar to the lowlanders. *A piece of truth can't hurt.*

The student—me, that is—still believed in their story that Van concocted that he and his associates were working for the hydro electric company which was building dams in the valley. It was a convenient disguise for them, because both tasks required them to go into the forest that surrounded the Valley, and come back to the guesthouse at the end of each day with muddied boots.

The forensic team Van and Sang accompanied brought boxes of *Aquafina* water bottles from Saigon, not only to drink, apparently, but also to wash themselves with it. They were mortified of dioxins, and probably thought that dioxins can enter the body via water through pores on the skin, just like Van thought malaria was capable of.

The people who worked at the guesthouse chuckled, amused mostly, but also slightly offended by having their homeland labelled a 'dioxin hotspot'.

"There is no need to worry about dioxins anymore," my landlord said at the dinner table.

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<sup>5</sup> Is it possible that people considered to be 'at risk' for something are demanded by the society to be more vigilant about other similar risks?

“They—what was the name of that Canadian company? Ha-phi?—they tested the soil in A Luoi and found high level of dioxin in Dong Son, but they found that there is no more dioxin in other parts of A Luoi,” his wife joined in.

In the late 1990s, Hatfield Consultants, conducted a survey of the valley in order to assess the remaining effects of Agent Orange. The conclusion they came to was that dioxin contamination in A Luoi still persisted, but it was concentrated in Dong Son commune located at the South-eastern end of the valley.<sup>6</sup> They found high concentration of dioxin in the soil samples collected from the former US A So airbase which was now located within Dong Son commune. Everywhere else in A Luoi valley, where only aerial spraying took place during the war, the dioxin concentration has now been reduced to the level considered *more or less* safe by the international standard. At least at first glance, therefore, my landlord’s understanding of scientific knowledge seems accurate. How this report translated to general sense of risk and warnings for the visitors and locals in the valley, however, was whole other question.

### ***Numbers and Meaning***

Van and I sat at a roadside stand on the Ho Chi Minh route under a tungsten lamp, savouring duck soup gruel with minced cilantros floating on the duck fat. Van’s colleague, Sang, who came out of darkness to sit with us refused to join us in eating duck soup. Van and I ate them without much thought, and suddenly became aware of our carelessness about the risk of dioxins at Sang’s adamant refusal to have a bowl of soup with us. Duck fat was one of the food items experts told the

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<sup>6</sup> Hatfield (2000) or Dwernychuk et al (2002). TEQ is a measurement of toxicity of dioxin congeners. Different congeners of dioxin have different toxicity, with TCDD (tetrachlorodibenzo-dioxin) being the most toxic. TEQ measures the total toxicity of different dioxins.



locals to avoid. Like many other nasty POPs (persistent organic pollutants) now dubbed ‘dirty dozen’, dioxins tended to accumulate in fatty tissues.

When Hatfield Consultants (2000) conducted a survey of the valley they collected samples of many different objects, including soil samples, sediments at the bottom of fish ponds, fish fat and liver, manioc, duck fat, human blood, breast milk, and so on. They took these samples back to Canada, and returned with *numbers* that represented their dioxin content. They found 52 to 82 pg/g TEQ (toxic equivalent quotient) of dioxins in duck fat tissue sampled in Dong Son commune. Duck fat collected in other parts of A Luoi contained 0.1 to 5.3 pg/g TEQ in Huong Lam Commune which is adjacent to Dong Son, and 1.1 pg/g TEQ in Hong Van Commune, which received less chemical spraying, according to the historical record. What these numbers meant, however, only became comprehensible through comparisons with other numbers.

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“They told me I was 61%”

“I was 62%”

“What are you talking about?” I asked the young men gathered at the People’s Committee of Dong Son Commune one afternoon in May, 2009.

“We got checked out as well and they said we were 61% *chat doc* [chemical toxin]. I don’t know what that means, but you needed to be 100% to receive the pay.”

The youths of Dong Son had reverence for numbers. “They said dioxin in our body is 8 times higher than normal,” a man told me, although what that meant was still a mystery to him.

Scientists produced many numbers, which acquired generality and meaning in relation to other numbers. The numbers that purportedly represented the amount of dioxin in the environment

in A Luoi was compared with the numbers that represented dioxin levels in other contaminated sites such as in Seveso, Italy and Times Beach, Missouri, where they had a large scale dioxin contamination as a result of industrial accidents.<sup>7</sup> Otherwise, they could also be compared to guidelines established for tolerable level of dioxin by each country. Most industrialised countries have set up standards below which the risk of exposure to the nasty chemicals such as dioxin is thought to be *practically* negligible. The trouble was that both the measured dioxin levels and the guideline standards turned out to be greatly variable.

The guidelines for dioxin level thought to be tolerable varied in different countries because of different theories that informed the experts in coming up with such guidelines (Silbergeld and deFur 1994).<sup>8</sup> For agricultural land, for example, Finland has set the limit of 2 pg/g TEQ, while places like British Columbia in Canada has set the limit at 10 pg/g (Hatfield 2000). The guidelines for residential areas varied even greater, with US Environmental Protection Agency (EPA) setting it at 3.9-4.3 pg/g and countries like Germany and Netherlands setting it at 1000 pg/g. Numbers like these provided scattered signposts for scientists and policy makers in the landscape of risk and acceptability, through which one was to make sense of the risk of specific localities.

In A Luoi valley, Hatfield scientists found that the dioxin level in soil varied between non-detectable to 6.9 pg/g in agricultural land in the areas *other than* the former US airbase sites such as A So and Ta Bat.<sup>9</sup> In the former A So airbase, they found the highest dioxin level of 100

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<sup>7</sup> TEQ is a measurement of toxicity of dioxin congeners. Different congeners of dioxin have different toxicity, with TCDD (tetrachlorodibenzo-dioxin) being the most toxic. TEQ measures the total toxicity of different dioxins. TCDD soil level near Dow Chemical plant in Midland, Michigan ranges from 22 pg/g to 450 pg/g (Hatfield 2000). Dioxin level in the soil samples measured in Times Beach was as high as 2,200,000 pg/g. These sites, they say, are considered as highly contaminated sites. Hatfield Report 1999 or Dwernychuk 2002.

<sup>8</sup> See Appendix 8 for discussion on risk assessment and how different models inform different risk standards.

<sup>9</sup> (Hatfield report cites another study by Japanese group which started in 1989, that measured between 1.2 to 59.0 pg/g TEQ.)

pg/g on the surface, and 897 pg/g of TCDD in a soil sample from 10 cm below the surface. These numbers fluctuated below and above different thresholds of acceptability, which also varied depending on guidelines used. None of the numbers from A Luoi gave them a definitive answer for how to interpret them.<sup>10</sup>

Moving up the food-chain from soil to sediment at the bottom of a fish pond, dioxin content in the sediment sampled in Dong Son ranged between 1.8 to 8.5 pg/g. Fish grown in one of these ponds where sediment sample contained 6.9 pg/g TEQ, had high dioxin content of 34.0 pg/g.<sup>11</sup> The guideline for tolerable daily intake of dioxin in food is also set at different levels for different countries, with US EPA setting it at 0.0064 pg/kg and Japan and Canada set at 10 pg/kg TEQ.<sup>12</sup> Foodstuff collected in most parts of A Luoi contained dioxin well below the standard set by Canada and Japan, but not the United States. In A So airbase and Ta Bat airbase (to a lesser extent) they found levels of dioxin in fish innards and duck fats that would provoke concern in places like Canada. All these uncertainties arising from variation in the standard were further complicated by the small sample size and great variability among the samples collected in A Luoi, which made it difficult to conclude the *safety* of the food from places other than airbase sites, or the *danger* of

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<sup>10</sup> Scientists from Hatfield Consultants knew that the differences in livelihood and habits of life in relation to one's environment also had to be taken into account in considering the significance of the measured dioxin levels. People's contact with soil is expected to be more frequent in rural Vietnam than in industrialised countries, which meant that the limit should be set at a lower level. It seemed to them that 350 pg/g, which British Columbia uses as tolerable limit for residential soil, would be a good compromise between different guidelines, although, of course, that was also an arbitrary number. Incidentally, Vietnam has set 1000 pg/g as the dioxin level above which it was identified as a 'hotspot' where remediation would be called for. In 2009, therefore, A So was technically no longer a dioxin 'hotspot'. (from POPS workshop, Da Nang 2009)

<sup>11</sup> But what does '34.0 pg/g' mean? A complete mapping of dioxin dosage to health effects on humans does not exist, which meant that in order to interpret this raw data Hatfield scientists had to use established guidelines and comparison to other toxic sites. For instance,

<sup>12</sup> For an individual that weighs 60 kg, assuming that the daily intake of contaminated food item (such as fish liver) is 20 g per day, the former standard (0.0064 pg/kg/d) corresponds to 0.0192 pg/g TEQ and the latter standard (10 pg/kg/d TEQ) corresponds to 30 pg /g TEQ in food item.

food from places like Dong Son.<sup>13</sup> Numbers acted like images or abstract signs of various hues and shades that ostensibly represented danger and safety. But what did all these mean to the laypeople?<sup>14</sup>

### ***Perception and Risk***

“I asked a Canadian scientist before coming to Vietnam,” I argued with Van. “He told me that because dioxin is hydrophobic, it doesn’t dissolve in water.” Scientifically speaking, water solubility of dioxin was so low that water was thought to be *more or less* safe. There were contradictory pieces of evidence and arguments, of course. Another scientist I met told me that ‘there is no safe-dosage’ for dioxin, and the local people of A Luoi remembered being told by the experts to avoid water from wells because they are likely to contain more dioxin than water from streams.<sup>15</sup> What the scientists I consulted meant, therefore, was that there was nothing to worry about *practically*.

“But I’ve seen many rivers here with no fish at all, especially around Dong Son commune,” Van said emphatically. The locals like Duc, on the other hand, had another explanation for this apparent lifelessness of rivers and creeks around Dong Son commune.

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<sup>13</sup> There were also movements of food items. If you were to ask at the market in the district centre, where fish they sold came from, for example, they would tell you that they came from Hue City or directly from the coast. But on the side of producers, I also knew a man in Dong Son who sold the fish raised in his backyard crater-pond at the market in district centre. Thuc in Hong Thuong (see Chapter 2) also planned to sell his fish there once the fish he was raising in the pond between Ta Bat airbase and his house were big enough. Commerce confounded the effort to localise the risk, requiring wider perimeter of risk to be on the safe side.

<sup>14</sup> In the context of limited sources of food, one could not simply decide to replace it with other sources just to be safe. In making recommendations, therefore, Hatfield scientists had to take such social context of the local people into consideration. While social scientists often criticize natural scientists and technical experts like Hatfield scientists for not taking into consideration these variability in life condition, but Hatfield scientists seemed to be quite sensitive to these issues. Aware of this particular context of A Luoi, Hatfield scientists knew not to recommend people to stop eating duck or fish altogether in their report. Nor did they advise environmental remediation of the A So airbase (which was not feasible given Vietnam’s financial situation), nor suggest that people of other commune also need to caution about eating ducks.

<sup>15</sup> If water solubility of TCDD dioxin was about 2 ppb, it may not be negligible amount if taken daily.

Rivers were full of fish before the 1990s in Dong Son, said my research assistant Duc, who was one of the original inhabitants from A So village that now lived in Dong Son. Then there was a migration at the beginning of the 90s. New people came from Hong Thuy commune at the northeast corner of A Luoi district. They used anaesthetic drugs in the river to fish. Caught them all. And under that sudden increase of population and need for food, fish stock was exhausted, just as the wild-hogs in the mountains had disappeared. The river also changed drastically when people started to draw water from it for their rice paddies. There were certain kind of trees that gave shade for the fish to lay eggs and for fries to grow in, but once the people of Dong Son came and began to cultivate paddy rice all around it, the creek became less stable. When it rained, it would flood. When it didn't rain it would go almost dry. But this all happened in the 1990s as a result of migration, rather than of the chemicals.

Senses and perceptions often failed you whenever you tried to speculate the remaining effects of Agent Orange. For the urbanites like Van and Sang, morsels of scientific knowledge they acquired in passing were augmented with the perceptual evidence of poison haphazardly encountered in the landscape that surrounded them throughout their journey in A Luoi. But for the people who lived there longer and witnessed the changes, there were always alternative explanations they could draw on in making sense of the changes in the environment.<sup>16</sup> The disappearance of fish from the river was not due to the chemicals, but due to 'population pressure', at least in the experiences of Duc.

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<sup>16</sup> "When you go up to A Luoi, you would see some bare patches on the hillside. But you know, not all of them are from Agent Orange," an American Anthropologist told me back at the Institute in Hue before I went to A Luoi for the first time. "Many of the ecological damages you see there are done by the Vietnamese, whether through slash-and-burn agriculture or through forestry. I don't mean to say that what Americans did wasn't terrible. But you know what I mean...."

## ***Truths and Beliefs***

As we were talking about the risk of dioxin in A Luoi, abruptly, Sang glanced at me and then turned to Van and said, “he is *only* concerned about the environment.”

There was something strange in his tone. A mockery? Disgust? Perhaps they read my argument as an expression of scepticism about the resilient effects of Agent Orange, like that of a pro-Dow Chemical or pro-military American. But I was not sure. They said nothing more about that.

Later, when I had another version of the story, I was a little bit relieved by this encrypted exchange between Van and Sang. The reality was fragile. Truth, an idea with its tail in its mouth. When the reality is largely woven out of half comprehended language, all one can do is to string together the consistency in order to reconstruct what is believable. Thus, beside the fact that I was raised in a lukewarm environment, where truth hardly ever posed danger, I was biased toward *believing* because of my incompetence in language and cultural knowledge. I was gullible, certainly.

To have sufficient level of wisdom to assess the veracity of what one hears and witnesses is necessary for a human interaction. Believing in everything and anything anyone says does not allow one to have independence required be a human in the eyes of the others. Prudence demands suspicion where experiential evidence is lacking. But to *believe* under the context of uncertainty was also precisely what entangled outsiders like this ethnographer to the suffering and the perception of risk of the local people of A Luoi.

Belief in the story of suffering caused by Agent Orange was dangerous, because it was tangled up with perception of risk. Story of suffering was always unique; but the theory of causation that

linked the suffering of the victims to Agent Orange and dioxin potentially threatened everybody, including the visitors, who were exposed to the risk of these chemicals. Thus to believe in the suffering of the ‘Agent Orange victims’ was not merely an exercise in logic, but a trial of empathy and vulnerability of senses.

“To have great pain is to have certainty; to hear that another person has pain is to have doubt,” wrote Elaine Scarry (1985). Risk of dioxin lies within the realm of uncertainty, between perceptual signs of dangers that lie hidden and scientific discourses: dead fish floating on the surface of water, stories of suffering of victims, numbers and announcements of the experts, hearsays and beliefs regarding what poses risk for us. But to believe in the stories of the others, who have suffered from what the given risk foretells and warns against, is not the matter of reason, but the matter of feeling.

It is offensive to try to understand terrible suffering with reason. When the other tells you, “I can’t think about it logically. That’s not how I think about it,” while pleading for understanding, it is not your reason that is put under scrutiny. It requires a leap of faith, perhaps, not even conscious to us. “Denial of the other’s pain is not about failings of the intellect but the failings of the spirit,” wrote Veena Das (2007: 57). But if to believe in risk is to act according to that knowledge, does it not also mean that to believe in a risk is to share their paranoia?

If belief is so integral to the perception of risk and causation of diseases, speaking about it and listening to it entail subtle negotiations of beliefs. When Linh (Chapter 2) shied away from concluding that her son Quang was an Agent Orange victim, it may have been due to her fear of scepticism by her interlocutors. Several parents of Agent Orange victims complained that their neighbours still expressed doubt that their children are Agent Orange victims. With wide publicity

Agent Orange has gained in recent years, unconditional doubt regarding this etiology has become difficult to sustain in places like Vietnam. But there was variation in the degree of belief on this chemical etiology. Excessive empathy with the victims and people at risk can lead one to excessive fear of contagion and contamination, which in turn could result in further stigmatization of the victims. As I discussed in the last chapter, in most cases, the toxic etiology of victims' suffering can only be spoken in the language of risk. Thus to acknowledge the risk of dioxin is to acknowledge the suffering of the people who are purportedly affected by dioxin; it is to recognize that causation and share their pain. But overreaction against such risk can also lead to our shunning of those who are suffering.

In this light, the way Tuan, the fiancé of Quynh Thi's daughter Lan, spoke about risk was particularly insightful. While Lan was 'normal' in most part (she had a sixth digit on her feet when she was born), Quynh Thi had another daughter who was severely disabled and a son who died soon after birth. With the stories of third generation Agent Orange victims born to parents who were born after the war circulating in contemporary Vietnam, this meant that his family was easily conceived as a 'high risk' family. To deny that Agent Orange *can* do this (i.e. etiology), was to deny the suffering of the family. But to acknowledge it, for someone like Tuan, was also to acknowledge the risk in marrying Lan. Tuan's solution was to share this risk. He claimed that everybody embodied the same risk, for everybody was already contaminated.

In face of the victims' family's suffering, the risk of dioxin was a fear one cannot deny in contemporary A Luoi, even though it was a fear that could not be allowed to affect the present.<sup>17</sup>

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<sup>17</sup> Speaking about the memory of the violence perpetrated during the Partition of India, Das (1997) talks about memory that cannot be allowed to bear fruit. The memory which can be usurped by the nationalist fervour as fuels for further violence, the victims of sexual violence during the Partition, chose not to speak about it. Das uses the metaphor of bearing this memory in one's body. In case of Agent Orange, the poison is in the body, and what cannot be allowed



This double-bind created by fear, belief and search for normalcy in relation to the victim of Agent Orange also entangled the outsiders who were visiting the places like A Luoi valley.

We must look, therefore, at the dialogic encounter between onlookers like neighbours and ethnographers and people at risk. What does it mean to perceive risk, speak about risk, or ignore it? What does this risk ‘perception’ of the Other demands of us, or call upon us? How does risk factor descend to everyday life and produce effects in people’s interrelationship, such as family relationship, intimacy, friendship, trade, and agricultural practices? These are sensitive issues not easily asked or answered clearly. Best one could do was to glean hints from what we observed and heard in passing.

### ***Water and Vulnerability***

Kan Kim was not at home. She was visiting her co-wife, a family member said, and one of her granddaughters was sent off to fetch her from an adjacent shack. Her husband who had died several years ago had remarried after she became paralysed in the lower half of the body. This was just after the war.

Their main family building was recently renovated. Brick walls looked sturdy; the bolts on the thick beams that supported the roof were still shiny. There was an altar at the centre of the wall across the entrance, a photograph of her deceased husband at its centre. Award certificates for their contribution to the revolution lined the walls. It was a family of war heroes.

After a while Kan Kim crawled into the room dragging her immobile legs. I would later learn that her condition is probably called ‘chronic peripheral neuropathy’. According to the report compiled by the US Institute of Medicine (1994), there is ‘Inadequate or Insufficient Evidence to

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to bear fruit is psychological fear that came from the knowledge of this poison.

determine association' between this condition and Agent Orange,<sup>18</sup> although both the US government and the Vietnamese government compensate for them as a disease associated with Agent Orange exposure.

"Oh, it hurts," she whined immediately, seeing the vice chairman of the People's Committee with us. There was a moment of silence. "Go on, do your business. Ask your questions", the vice chairman prodded us. I felt a hint of hostility. *As if you can do this 'research' thing without our help*, he seemed to say. I was at a loss. How would we talk to her when she can't even speak Vietnamese? I looked toward Giang, my research assistant from Hue, for help, but he returned a blank look as he could not speak a word of Paco either. *Fine. I'll give it a shot then*, I told myself.

"You been living here, long time?"

"Ba, you've lived here for a long time?" Giang restated my Vietnamese in Vietnamese.

Kan Kim started in her vibrato voice, "I was off over in the forest over there, and I could walk no more..." Abruptly, the vice chairman interrupted her and said that she married into this village. She was a Paco from Bac Son, and she was married to a Katu man from A So village.

The vice chairman would sometimes translate for us; sometimes not. "Bà, you can speak Vietnamese. Go on and speak Vietnamese".<sup>19</sup>

The vice chairman was restless. He paced around the room, played with Kan Kim's granddaughters. Once he even stood up to shoo the monkey out of the house. He was watching our miserable effort at communicating.

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<sup>18</sup> Institute of Medicine 1994. Early onset transient neuropathy is included under 'suggestive evidence of association, but chronic peripheral neuropathy is not. I have heard of chronic cyanogenic glucoside poisoning from eating unprocessed cassava also caused partial paralysis of legs. People in A Luoi used the word 'sai' or drunk, to describe the toxic effects of raw cassava, and it was apparently quite common in the 60s and 70s when their precarious living condition made it difficult to properly prepare the cassavas to detoxify them before eating.

<sup>19</sup> 'Bà' is an honorific term for older women.

The vice chairman walked up to the water tank, and he poured himself a glass of water. Then he turned around and asked us, “Do you want some water?”

I looked at the tank, which seemed to have brown moss lining its rim (I would know later that I was actually looking at the fish tank beside the water tank he poured water from).

“No, we are okay. We just had some water,” Giang answered.

“Are you afraid?” the vice chairman laughed.

“No. We are just full,” Giang muttered apologetically.

“As for us, even if we are afraid, we still have to live here.”

The next morning, Giang and I were at a café in the A Luoi district centre with some of Giang’s friends from Hue. “You shouldn’t drink water when you are in Dong Son”, one of them had told us. *I already drank it*, I thought to myself. And suddenly that gesture of hospitality the day before came to bear a sinister meaning. Dioxin is apparently hydrophobic. I had read it in some scientific articles, and one of the scientists from Hatfield also told me so. But *how* hydrophobic? And even if scientifically speaking the risk is small, the people of Dong Son wouldn’t know that, would they?

There was a group of Vietnamese from Saigon and Hanoi who brought cases of bottled waters. Some rumoured that they even wash themselves with these bottled waters to avoid exposure to dioxins. Did the local people resent the outsiders who can avoid the poison, when they had to endure without a choice?

This experience reminded me of an article by an anthropologist named Lindsay French (1994) on Cambodian amputees. After leaving the field, French received a letter from one of the amputees:

He wrote, ‘Should compassion appear in action or just words and feeling?’ He encountered with his own experience in a training school for the handicapped in which

more than half of his teachers were able-bodied and somewhat less than half were amputees. Perhaps the able-bodied teachers just *felt* compassion toward their students when they committed themselves to teach the disabled at low rate of remuneration, he wrote, because individually they all left to take higher-paying jobs when these became available, ‘while the amputee teachers, who are incapable of feeling compassion for each other, kept working to help their disabled friends, even [though] their living wages [were just] as limited.’ (French 1994: 88).

When people with chronic disability or people chronically at risk due to their contaminated environment lament that others cannot understand their suffering while the fellow sufferers can do so even without speech (Jackson 1994), is it possible that they are in fact commenting on how people like us go in and out of the space of their suffering, while the fellow sufferers must remain, *despite themselves*?

The vice chairman’s accusation hit its mark right on the bulls-eye: we were those who could come and go.

## ***Conclusion***

People in A Luoi generally had mixed feelings about the chemicals left by the Americans. Many people living around the district centre (away from the dioxin hotspot in Dong Son) were irritated by the reputation A Luoi came to have as a land poisoned by the chemicals from the war. Somehow it was incongruent with their lived experiences. They appeared offended, when they spoke about how some people from the lowland avoided food and water in A Luoi, as if they were all lethally contaminated. For those who lived there for decades after the war without showing any symptoms of diseases, Agent Orange was a problem of the past, or of elsewhere. No longer a risk which threatened their health now, people like my landlord’s family saw all the recent hypes about Agent Orange as a nuisance they would rather not think about. But others also mentioned, in truth-of-the-matter fashion, that the fear for their health and others’ health, they certainly had, but

it was useless to think about, so they preferred ignore it.

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The day after I ate duck gruel with Van, I was told that Van and Sang were actually secret police accompanying the MIA team to keep an eye on them. I scanned my memory for a possible slip. Did they approach me to keep an eye on me as well? Was there anything I said that might compromise me, or people I associate with?

The morning Van and Sang left A Luoi, I missed them by an hour at the hotel. The American MIA team had a habit of keeping their schedule ambiguous and abruptly leaving the site of excavation. It was, as I was told a year later, a way to reduce the risk of having their equipment at the field site stolen by the locals on the last day of their digging. So as if stealing away overnight, the manner of their retreat was swift and secretive, with their boots still crusted with clay from the field.

Just before I got on the bus to go back to Hue, I bumped into Sang.

“I heard that you are accompanying the MIA team.”

“Yes, yes,” Sang smiled and bobbed his head, then disappeared into his room without saying anything further.

An American Ambassador in Hanoi once called the issue of Agent Orange, the ‘one significant ghost of war’ (cf Fox 2006). Certainly Agent Orange was spectral. Even decades after its toxic effects were suspected, uncertainty hovered over the precise effects and risks it posed on people living in areas contaminated by it. But Agent Orange was also not the only issue that kept on resurfacing after the war. The issue of MIA was also another ‘ghost of war’.

—PART IV—  
HUMANITARIANISM

CHAPTER 10 VICTIMS ON THE STAGE

In the late afternoon when the sky begins to darken and the streets become busy with people on mopeds on their way home from work, Tran Hung Dao Street in Hue City becomes bustling with men sitting on the sidewalk drinking beer at the end of the work day. Men sit on low plastic stools surrounding small blue plastic tables holding *moi* (snacks) like deep fried frog legs and pork intestines, sharing gossip about their respective workplaces, or making crude sexual jokes. Once in awhile, elderly women in conical hats or children in dirty T-shirts would come by, holding out a basket of peanuts or chewing gums. A subtle nudge on the shoulder, if they felt hopeful; a quiet enticement, ‘peanuts, sir?’, if they dared. Otherwise they stood silently until they were shooed away by potential patrons, or they became tired of heartless tipsy men. My officemates rarely bought anything from them, except, occasionally Dinh, who was always liberal with his money.

It was on one of the early days of my fieldwork. There were five or six of us around the table, sitting on the sidewalk of Tran Hung Dao street drinking beer. Things were getting quite merry, and I was trying to resist the pressure to chug the glass of beer in front of me, which was the way many Vietnamese liked to drink beer. It was a wrong move professionally, as an anthropologist trying to mingle with the locals, but my stomach was no longer holding well the sudden flood of cold beer. The ice floating in it was also of suspicious hygiene.

“I drink slowly. But same amount. See?” I’d say, holding up my glass. And they would let me off the hook for one round, and continue with their peer pressure the next time they toasted their glasses.

It was getting quite dark. A small woman approached us carrying what appeared to be an oversized baby in her arms. As she entered the sphere of light under the streetlamp above our heads, you could see that the boy she carried was no longer a baby, but almost a full grown man.

“Agent Orange child”, Quyen, who sat beside me, whispered under his breath. The limp limbs and the expressionless face was typical of the victims of Agent Orange. I had seen photographs of children just like this one in books about Agent Orange, but it was the first time I had actually encountered one face-to-face.

The woman shifted her child in her arms, held out her conical hat and stood silently behind Quyen. My first instinct was to ignore them, as we did with most beggars and peddlers that came by our table. Suddenly conversation around the table became lofty, and I could sense my officemates looking at me from the corner of their eyes.

As I looked at them and hesitantly put my hand in my pocket to see if I had any change, Quyen pulled out his wallet and gave the woman some money. “I already gave her some money. You don’t need to give her anything,” Quyen told me, but I already had my change out in my hands. The woman looked at my hands expectantly, and I pulled out 2000 dong and handed it to her. *Two dimes for all the drama.*

Then, as the woman and the child moved out of earshot, my research assistant, Giang, whispered to me: “He might not have been her child, you know. Sometimes they hire Agent Orange child to go begging.”

I suddenly felt silly, embarrassed first by how I was so easily conned, then recognizing the hypocrisy in my fabricated ‘empathy’ toward Agent Orange victims, which is ostensibly what charity was all about. But what is it about Agent Orange victims that makes them worthy of special attention not given to any other people likewise in need?

People in Vietnam often used the word ‘*tình cảm*’ when they talked about giving something out of charity. Literally, *tình cảm* meant ‘sentiment’ or ‘affection’, but it seems to have a wider application. Charity was given in the name of *tình cảm*; but bribery was also requested for the sake of *tình cảm*. It appeared that any transactions involving ambiguous and priceless exchange of gifts between private individuals were generally explained in terms of *tình cảm*.

“To some Japanese, they may seem shamelessly demanding. We may not understand it, but this kind of thing is quite normal in Vietnam,” an elderly Japanese anthropologist I met in Hue told me as we were talking about peddlers. “People here give alms and receive alms with grace. With us, we end up giving too much or, like myself, nothing at all.”

I was not sure if all Vietnamese gave alms with grace or with complete ease. Nor was it just Vietnamese who were involved in the humanitarian effort to aid the victims of Agent Orange. International organizations and individual philanthropists played a significant role in providing aid, and thereby giving certain shape to the experiences of ‘Agent Orange victims’.

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Months later, I was recounting this story to John, drinking beer on a wooden bench on one of the myriads of small side streets that spread like a spider web throughout Hanoi’s Old Quarter. John was an American humanitarian aid worker who had a project to support Agent Orange victims in Quang Ngai province.

“I don’t give money to the beggars anymore,” he said, as I finished my story. “I used to. But not anymore. And I don’t feel bad about it, because I am helping other poor people. With the beggars you can never know. There was one woman who used to come here. She looked so poor. But Tinh here said that she is actually not poor. She has money. But she pretends to be poor in order to get people’s sympathy. But when we work in Quang Ngai we know we are helping poor people because we ask the Women’s Union.”



What makes some people deserving help more than others? What entitles them to sympathy and material aid? What is the relationship between knowledge and charity? In the context in which there are many sources of grief and suffering, what makes the suffering of the Agent Orange victims special? Special for whom? And what does it mean for the beneficiaries to be given charity for being Agent Orange victims? These are the questions I discuss in this chapter.

### **Victims on the Stage**

*Summer is here in the streets  
People are out in the streets  
But why do you still look so withdrawn?*

*Summer is here in the streets  
Cicadas rustling overhead  
Why are you still deep in your sorrow?*

Hanh stood on the stage with a microphone held in her small hands and began to sing, first timidly, then with increasing confidence. She was one of the clients of the Centres for Assisting the Victims of Agent Orange and Unfortunate Children operated by VAVA Danang. No longer a child, but a young woman of twenty-odd years old, and a client with greater functionality, she often helped the other children as if she were one of the staff at the Centre. But on occasions like this, when there was a gift-giving ceremony at the Centre, she came on stage as an Agent Orange victim once again.

*Oh my little brother, a little orphan, I cannot see you anymore.  
Oh my little brother, a little orphan, I cannot hear you sing anymore.*

*They have killed you.  
With Agent Orange they killed you.  
With Agent Orange they killed you.*

As she reached the climax of the song, her voice went slightly out of tune, and the sound coming out of the speaker crackled and a high-pitched hum followed. Thu, one of the staff, quickly walked over to the amplifier and tweaked the volume, and Hanh's voice resurfaced, as she threw a glance of gratitude toward Thu.

*Agent Orange killed my mother long ago in a raid,  
Leaving me with a little orphaned brother to be cared.  
I nurtured him with every drop of my life,  
Every drop of my light  
To bring him back from darkness,  
To bring him back from lifelessness.  
But now the war has come back to claim its toll  
Poison Orange eating away at his life.*

*Mother! I cannot see my little brother anymore  
I cannot touch my brother anymore<sup>1</sup>*

Hanh lowered her microphone as she finished singing Thanh Truc's *Vì Sao Em Chết* ('Why s/he died'), and the audience gathered at Centre I of VAVA Danang clapped their hands.

The Danang branch of VAVA was one of the most active branches of VAVA that were scattered all over the nation. Established in January 2005, the team of young staffs there was a powerhouse, working fulltime in gathering donations and support of the community, distributing economic aid to the victims' families, and operating two Centres that provided daycare for the victims of Agent Orange.

Many of the local branches of VAVA were staffed with retired government officials, often from the Department of Labour, Invalids and Social Affairs or the Department of Defence. In

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<sup>1</sup> *Vì Sao Em Chết*, by Thanh Truc. Translation adopted from (<http://vn.360plus.yahoo.com/ck3zw/article?mid=8&fid=-1>) accessed June 25, 2011

contrast, the Danang branch of VAVA was staffed with young professional aid workers. Headed by Ms. Nguyen Thi Diu, who had joined the organization from Red Cross, and whose office was located just across the courtyard, the office was staffed with three other young university graduates. Since 1998, the Vietnam Red Cross Society had been providing humanitarian support for Agent Orange victims through the establishment of the Agent Orange Relief Fund. During the period of 1998 to 2004, the Danang branch of the Red Cross had gathered 3.7 billion VND<sup>2</sup> (\$230,000) in order to aid the victims of Agent Orange. When VAVA Danang was established in 2005, this Agent Orange Relief Fund was transferred over to VAVA Danang and the responsibility to care for the welfare of Agent Orange victims was consolidated.<sup>3</sup> Since then, VAVA Danang has raised over 10 billion VND (\$625,000) to be used for supporting the victims.

While the headquarters in Hanoi dealt primarily with the work of seeking justice in the international arena (including litigation) and negotiating with the central government for better policy (such as disability stipends), the aim of these local branches were primarily to provide direct assistance to Agent Orange victims. However, in places like VAVA Danang, public awareness and solidarity with the international peace movement was also an important part of their work. VAVA provided these peace movements with the evidence of the horrors of war, and the foreign visitors brought donations and expressed solidarity with the victims in return.

Unlike A Luoi, Danang was a case of urban dioxin contamination. Danang airport, which spread from Tinh Ke district southward at the western end of the city, was the main airbase for Americans in their operation in the entire Central Vietnam during the War. Many of the Ranch Hand Operations that sprayed the jungles in the Central Highlands with chemicals were also launched from here. Thus, like A So airbase in A Luoi, the chemical storage and reloading sites

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<sup>2</sup> Vietnam dong (1 VND is about \$16,000 USD)

<sup>3</sup> This was unique aspect of VAVA Danang. In other cities such as Hue, Red Cross and VAVA operated independently.

continued to have a high level of residual dioxin (Hatfield 2009). Currently, there are estimated to be about 5,000 suspected cases of Agent Orange poisoning in Danang, among which 1,000 are children. Since its establishment of the two *Centres for Assisting the Victims of Agent Orange and Unfortunate Children*, VAVA Danang has been providing daycare and vocational training for some of the children thought to be affected by Agent Orange. It was in one of these two Centres that gift-giving ceremonies were usually held.

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Next on the stage were the younger children. They donned their dresses made of shiny papers, and began walking up and down the stage, pretending that it were a catwalk. It was their fashion show.

*There's nothing you can do  
To keep it out  
There's nothing you can do  
Just scream and shout*

A chirpy song by some Swedish pop singers was in the background. Children shook their body to the beat of the music, some with shy smiles on their face, others with indiscernible expression.

Then came a chorus:

*I'm So lucky lucky  
I'm So lucky lucky  
I'm So lovely lovely  
I'm So lovely lovely*

After Hanh's sentimental performance, shy smiles of the innocent children brought smiles of relief from the audience. Some of the children had visible disfigurement, but none had a disability major enough to keep them bed-ridden.<sup>4</sup> There were local notables and benefactors seated in the first row, waiting patiently for the performance to end, occasionally turning to someone beside them to chat.

*You can fool yourself  
I promise it will help...*

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<sup>4</sup> A certain level of functionality was a condition for being admitted to the Centres, because they did not have enough staffs to provide one-to-one care some of the severely disabled children required.

The song that choreographed the scene continued, as if to strike an odd note to the harmony of joy and gratitude that filled the stage....

Events like this were frequent and sometimes quite exorbitant. Parents of the clients at the Centre and other Agent Orange victims of the community came to attend these events. Local notables and politicians made their appearance. TV crews and newspaper reporters were also present. Each time, the clients of the Centres would sing or dance for the guests and benefactors to show their gratitude.

At the end of these events, the benefactors (usually either foreign donors or local businesses) would hand out gift-bags containing items like biscuits, condensed milk, instant noodles and an envelope containing a small amount of money. Usually, it was the children themselves, who would walk up the stage and receive the gift. If the children were absent or too disabled to walk up the stage on their own, their parents would go among the children and return with a gift bag, which sometimes bore the logo of the company that donated it. These events were often aired on mid-day news on the local VTV (Vietnam Television) network of Danang City. Public awareness-raising was one of the strengths of VAVA Danang, and the local businesses were also graced by its publicity in return for their financial contributions.

### ***Gift and Resentment: beneficiaries of charity***

In the classic anthropological text, *The Gift*, Marcel Mauss (1990) explored how social bonds are created in acts of gift-exchanges. Gifts bound the recipient to the donor, just as the donor was always already bound to the recipient. Obligations to give, to receive and to reciprocate: the refusal of any of these meant rejection of social ties. “To refuse to give, to refuse to invite, just as to refuse to accept, is tantamount to declaring war. Also one gives because one is compelled to do so, because the recipient possesses some kind of right to property over anything that belongs to the donor” (Mauss 1990: 17).

The act of reciprocation does not eliminate the obligation; there is always an excess which requires further gift exchanges. There is no such thing as a free gift. Mary Douglas thus remarked that in charity organizations, the pretence of free gifts ‘with no strings attached’ often elicited resentment in people who received donations. The people on the receiving end of charity usually did not like their benefactors. The refusal of reciprocation, or the foreclosure of this possibility, was a rejection of personal ties between equal partners implicated in gift-giving.

In a study on medical humanitarianism in Haiti, Pierre Minn (2011) noted a mixture of feelings of gratitude and resentment in those who received international humanitarian aid. Some gifts were certainly appreciated. But the receivers also sometimes expressed resentment. The humiliation of soliciting help; time-consuming procedures of submitting requests for aid from large international organizations; receiving useless gifts from benefactors who assumed their interventions were entirely positive; additional burdens some gifts entailed: all these experiences variously became the sources of disgruntlement expressed by the receivers of charity. But this resentment and dissatisfaction was not necessarily a one-sided thing. Donors also sometimes expressed resentment for the lack of gratitude they received in return for their gifts.

The families of the victims of Agent Orange in Vietnam that I met often said that any help was welcome: help to themselves, in theory, or help to others, in general. But from time to time, I also encountered signs that made me wonder. There was the gaze of a young father who came to receive a gift-bag at VAVA Danang, for example. Some of the parents gathered at VAVA for gift-giving ceremonies were clearly regulars. They casually chatted along with other parents, occasionally casting smiles to their children on the stage, or going up with them or in their place with grace and comfort. Then there were others, like Thu, who was visibly awkward in such a situation. Chin drawn in, glaring at the benefactors with disdain: he walked in front of the crowd to receive a bag of cookies for his son and modest amount of money slid in an envelope to help feed his family. It

was the first time he came to such an event.

“I got work to do, too. I usually don’t have time,” he told me later. His son was bed-ridden, so he could not come. “He is, you know, an Agent Orange”, said Thu, while looking unhappy with a bag of gifts in his hands.

One might also recall the stories from chapter 2. Linh, a mother of an Agent Orange victim, worried over the fodder to feed the cow ‘given’ by an aid organization because her child was thought to be an Agent Orange victim. She said:

They are lending us money because he is an Agent Orange victim. But it will be a lot of work for us. You have to worry about diseases, food.... They say we don’t have to return the money if the cow ends up dying of disease. So that’s good. But where do we get the grass to feed it in the rainy season? I already have so much work to do.

Then, there were also those wheelchairs gathering dust in the backyard of the houses in A Luoi, where dirt roads and trails made it impassable by wheelchairs. Donors had their own vision of what the receivers needed (which was linked to their vision of what good life meant). Only when this vision of the donors coincided with the need of the recipients, was such a gift appreciated.<sup>5</sup>

According to Mauss (1990), charity given to the poor, children, or the disabled did not create the social bond ordinarily created in other types of gift-exchange. Instead of constituting equal partners in gift exchange, the receivers of alms were the surrogate for the dead, spirits or gods. The alms to the poor were offering to the divine, given for the sake of buying their peace and protection from the vagaries of a precarious life. In the acts of giving alms to the poor, therefore, the ethics of gift-giving intersected with the theology of sacrifice.

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<sup>5</sup> Especially since the symbolic value of gift-giving was largely meaningless in these impersonal and anonymous interaction between the benefactors and the beneficiaries. They had no personal relationship to begin with, and the gift giving in these humanitarian aid was never meant to create it.

### ***Charity and Protest: benefactors and movement***

In modern forms of charity, one may say that this theology of sacrifice is replaced by politics of protest. Philosopher Max Scheler argued that the humanitarian act is “socio-historical emotion [which] is by no means based on a spontaneous and original *affirmation of a positive value, but on a protest, a counter-impulse (hatred, envy, revenge, etc.)* against ruling minorities that are known to be in the possession of positive value.”<sup>6</sup>

The humanitarian aid for Agent Orange victims was also a disguise for a protest against the US government and its militarism, and anger toward corporate greed and risks posed by their irresponsible behaviours, rather than simply arising out of spontaneous empathy toward the suffering of the victims (although it is not to say that they do not recognize their suffering or sympathize with them). Most people interested in the issue of Agent Orange, such as the French aid worker who brought credit money for Linh and Quang to buy cattle (see Chapter 2), were quite sure that if justice were to be done, the United States government and the chemical companies should bear the responsibility to compensate the victims. But as this course of events is unlikely to take place, *in the meantime*, humanitarian organizations and individual philanthropists (as well as the Vietnamese government) have offered their hands in aiding the victims in dire need of material and psychological support. Thus the aid to Agent Orange victims (rather than to the poor or disabled in general) served as a critique of the American government and the chemical companies who did not own up to their responsibility in compensating the victims. Concerted effort to build a coalition against American militarism and the use of chemical and nuclear weaponry was also an undercurrent of international support for Agent Orange victims; the victims of Agent Orange were surrogates or icons for whatever issues and protests international supporters already took upon

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<sup>6</sup> Scheler, Max. 1990 [1915] *Ressentiment*. Lewis B. Coser and William W. Holdheim, trans. Milwaukee: Marquette University Press. (p. 85) Cited in Minh (2011).



themselves.

Humanitarian aid was also a substitute for more confrontational political actions like lawsuits. Some American expatriates in Hanoi, who have been eagerly waiting to see Agent Orange victims being compensated, nonetheless thought that the litigation was a bad idea, and humanitarian aid was the way to go.<sup>7</sup> Aside from the immense cost of litigation, they were afraid its confrontational style may thwart humanitarian initiatives. Litigation also aimed at sealing the deal on truth and culpability—like the question of what the precise damages are, or who the victims are. Even if litigation can be won, these questions could potentially lead to much difficulty and further suffering.<sup>8</sup>

### ***Dilemmas and Demarcations in Charity***

It was a year before I started my field work in Vietnam that I first met John and Dinh in one of the Southern provinces. They formed a two-man team representing a humanitarian aid organization based in the United States. Their mandate was to bring aid to the poor and the victims of war. That year, they were funding about a dozen small brick houses, which they called ‘compassion houses’ for Agent Orange victims. The day I was visiting them, they were planning to go to the local branch of VAVA in order to finalize which households should be receiving the houses.

On one wall of the office, there were photographs of the Agent Orange victims. Some of these people, they said, would receive compassion houses. As I looked at the photographs of the victims—some with visible deformities, some without, some born before the war, and some more recently—I wondered how they came to the conclusion that these were Agent Orange victims. Their conditions were so varied; it seemed there was no such thing as a ‘typical Agent Orange

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<sup>7</sup> Personal communication.

<sup>8</sup> In Minamata, the divisions between plaintiffs and non-plaintiff residents, between certified victims and non-certified victims created fractures within the community. See also Veena Das’s (1996) work on Bhopal.

victim'. If they were not Agent Orange victims, would John's organization still fund their compassion houses?

On the way back to the guest house, I asked John, "How do they know that those people are actually Agent Orange victims?"

I knew immediately that it was a bad question.

He looked at me apprehensively. And after a pause, he said, "it doesn't matter. It doesn't matter if they are Agent Orange victims or not. If they are suffering, we help them."

As many activists had commented, the spirit of humanitarian aid does not favour strict demarcation of sufferers into victims and non-victims. This, however, did not alter the fact donations are collected in the name of Agent Orange victims by many organizations operating in Vietnam, and they also need to draw boundaries (albeit loose ones) by deciding to whom they give aid. Some of these demarcations came out of practical needs.

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It was during one of the visits to the families who had received aid in the past. We were walking on a sand path between makeshift fences that marked the small plots around the houses. Each plot had one or two papaya trees, or a palm tree growing in the sand.

We passed by a grey haired man, who wore blue sandals on his amputated knees, holding his hands out. A woman, who could have been his wife stood just behind him, and muttered a few words. There was a child of about ten, who stood there, glaring at us.

"See people like that, you'd better not pay attention to them," John said. I turned to him and saw him stare straight ahead of him, with chin pushed forward, holding his breath, as if to ward off a feeling that might compromise him.

I followed suit, not quite knowing what the implications would be if I did otherwise. There were so many unspoken negotiations, politics and sentiments that I did not understand.

“He is a wounded soldier from Saigon regime,” Dinh dropped behind and added once we walked past the man with amputated legs.

There were many practical restrictions regarding who should or who can be given aid. Both John and Dinh felt sympathies for former ARVN (South Vietnamese Army) soldiers like the man we met that day. But associating with them was still tricky in places like this province where suspicion and hatred toward Americans still existed among the people in power. With their tenuous position as an American organization (even after fifteen years of operating there), John and Dinh still had to refrain themselves from bringing aid to people like that man.

Technically, VAVA and other humanitarian organizations provided aid to Agent Orange victims who are former ARVN soldiers. But in places like this province in central Vietnam, where internal division during the war left much ill sentiments, there was still a significant disincentive for the aid workers to bring aid to former ARVN soldiers.

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There is an aporia to humanitarianism, which is ostensibly based on empathy for the sufferers, but the practical demand to be impersonal is also significant. Because personal favours to particular individuals may elicit accusations of corruption, the beneficiaries are chosen not for their private suffering, but for the representative value of their experiences, which happens to coincide with the profile of given protests and humanitarian movements. Except for individual donors, most humanitarian organizations rely on other donors to finance their projects to help people like Agent Orange victims. This means that the organizations have to be responsible toward both the donors’ desires and the needs of the community to whom they brought donations.

Organizations like VAVA usually gave donors the choice of which projects to put their money towards. Even then, the precise use and distribution of funds was deferred to the aid workers and the particular context in which they worked. This double role of the humanitarian workers as

‘translators’, who bridged donors and recipients, sometimes resulted in a strained relationship between aid workers and the potential beneficiaries.

### ***Victims and Community***

It was during the summer of 2008. I was with John and Dinh in Hiroshima with a delegation from Vietnam which included a survivor of the infamous My Lai massacre, and the vice president of VAVA. John and Dinh had been working on humanitarian projects near the former My Lai village in Quang Ngai Province in Central Vietnam. My Lai had become somewhat of an iconic place after the massacre perpetrated there by American GIs during the war. For this reason, one of the survivors of the massacre was invited to the Hiroshima Peace Conference as a victim of war.<sup>9</sup>

During our stay in Hiroshima, the relationship between John and Mr. Chinh, the survivor of My Lai massacre, turned sour. The conflict, as far as I could gather, began with Chinh’s dissatisfaction about how aid money was distributed. He must have realised that John spoke about My Lai massacre and the problem of Agent Orange in many occasions like this peace conference in Hiroshima, sometimes (not this occasion) with the purpose of gathering funds for humanitarian activities in Vietnam. Chinh, however, complained that the aid did not necessarily go to My Lai village and the survivors themselves. Instead, it went to the wider commune and other communities throughout Quang Ngai province. This, John and Dinh had little control over, because ultimately the decision on how the resources were distributed was made by the local Women’s Union or VAVA. But in his fury, Chinh would not hear them out. He insisted that if they raised the money using the stories of their survival, that fund should come to the survivors.

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<sup>9</sup> On March 16, 1968, a unit of American soldiers in Quang Ngai province in a village of My Lai went on a killing rampage of hundreds of unarmed villagers. The My Lai massacre became famous as an example of American atrocities, but it was also a story of American heroism. While a unit of ground troops was carrying out the massacre of villagers in My Lai, another unit headed by Captain Hugh Thompson came across another unit of American soldiers going on a killing rampage in the village. Thompson ordered his helicopters to be landed between the villagers and his berserking fellow countrymen, and told his crew to shoot the American soldiers if they started shooting at the villagers while he pulled them out of the ditch to help them.

John was quite aware that My Lai was only one of many cases of massacres that happened throughout South Vietnam. My Lai was an example, a symbol, of all other atrocities committed by Americans in the War. But the survivors were also specific individuals.

“You know Tak,” John once told me, “what we need is a new paradigm for peace. I don’t know what it will be yet, but we need to get beyond the perspective of the state. The politicians and the military leaders have failed us. We need new leaders. We need to follow the victims. They are the real leaders of our struggle for Peace. And we have to follow them”.

But what if the victims have different agendas? What if they do not even wish for peace, but wish for survival, a better standard of life, or even revenge? Their life and stories are often turned into an icon for peace in meetings like this peace conference in Hiroshima. But what do they get in return? To testify is to testify at once for oneself and for the community, as a philosopher Jacques Derrida (2001) argued,<sup>10</sup> the contemporary testimonial genre places contradictory demands to testify from one’s own *singular* position *for the community*. Under this paradoxical requirement of singularity and universality, the testimonial genre and its specific condition of real-effect bar and dissimulate a certain past from entering historical consciousness. To testify as a ‘victim’ for a peace movement, then, is also to compromise the uniqueness of the testifier.

In a conference like the International Peace Conference in Hiroshima, the victims of wars make appearances and spill their guts. The cause of peace activism is made concrete and immediate by their stories of suffering; and the victims gain a momentary fame by giving

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<sup>10</sup> Speech genres are “relatively stable and normative forms of utterance” that exist within a society (Bakhtin 1986: 81). If some people are well-versed in certain genres but not the others, there is nonetheless no genre-less utterance (Morris 1997: 33). All utterances are produced and understood within one genre or another. For instance, David Morris (1997: 33) argues that people’s expression of suffering is “always shaped and constrained by the speech genres of specific discourse communities.” Arts, poems, novels or even courtroom testimonies, academic writings and clinical encounters: each situations and forms of representations has its own genre which not only shapes the ways in which suffering is narrated, but also permits or forbids certain experiences of sufferings to be expressed (ibid: 34). And “if you cannot talk about an experience, at least to yourself, you did not have it,” as Caryl Emerson (1983: 250) writes, the unspeakable suffering is “impossible as an experience.”

testimony. But I am not sure how the victims themselves fit within the context of peace movement as a whole. Mrs. Miyake, our host while we stayed in Hiroshima, told me that some *hibakushas* (people exposed to the atomic bomb) who come to give their testimonies in these conferences often leave as soon as they finish giving their testimony, as if to say that it is their duty to come and testify, but they do not want to be a part of the anti-nuclear weapon and peace movement.

What is the relationship between victims and the movements that support and are supported by their existence?

### ***VAVA and the Universal Victim***

In July of 2009, I was nearing the end of my fieldwork in Vietnam. I was visiting Mr. Hoang at the VAVA headquarters in Hanoi to gather some last minute information before leaving the country. In the spring of 2008, the then president of VAVA, Senior Lt. General Dang Vu Hiep, had passed away due to cancer, and a new president had just been selected. The new president, Nguyen Van Rinb was also a retired military general from the Department of Defence. Because I had been interested in the issue of advocacy in the political mobilization of the victims of Agent Orange, I was wondering what kind of person Mr. Rinb was; and why he was selected as the president of VAVA.

While VAVA identifies itself as a non-governmental organization (NGO), the nature of NGOs in Vietnam is slightly different from what people think of as NGOs in Western countries.<sup>11</sup> Organizationally, NGOs like VAVA fall under the Vietnam Fatherland Front, which is an umbrella organization for pro-government mass organizations and special interest groups such as VAVA.

Western scholars have used the word ‘mono-organizational socialism’ to describe the political system of Vietnam (Thayer 2009). In Vietnam, the Communist Party “exercises hegemonic control over state institutions, armed forces and other organizations in society”

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<sup>11</sup> VAVA v. Dow et al. Original complaint.

including the Vietnam Fatherland Front (ibid. 3). Many leadership figures in mass organizations like VAVA serve on the Party Central Committee and the Presidium of the Vietnam Fatherland Front (Thayer 2009: 3). The leadership of VAVA also considered their relationship to the government to be that of collaboration and collusion, rather than independence and confrontation.<sup>12</sup>

The naming of VAVA is also telling of the relationship between the organization and its constituents. The original founders of VAVA named this organization “Vietnamese Association *for* the victims of Agent Orange/Dioxins” rather than ‘*of*’ the victims, because they wanted to be inclusive of people who wanted to help their cause, not necessarily just the victims and their families. It was a noble intent to keep the constituent of the organization as open as possible, but it still invites the question: how much of the movement is actually of an initiative of the victims and their families? The leadership of VAVA largely consisted of people like scientists and former military officers, who had much sympathy for the victims, but seemed to have little personal stake in the issue of Agent Orange.

My landlord in Hue City once told me that this kind of arrangement was not uncommon. Because his son was haemophiliac, he was once a member of the haemophilia society of Vietnam. But he had left it when he realised that this organization was dominated by physicians, and that the voice of the patients’ families was not heard in the organization. He did not mean that the doctors were not concerned about the patients, but their interests were not the same as those of the patients. His insights gave me a moment to pause and wonder if this was also the case with VAVA.

Although I did not mention this to him, perhaps Mr. Hoang detected an accusatory note in

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<sup>12</sup> In Vietnam, international NGOs have considered supporting domestic NGOs as a way to “carve out a space for civil society activity in authoritarian political systems” (Thayer 2009: 4). Thus they made partnership with the local NGOs like Women’s Union and VAVA and worked through them. As a branch of government apparatus, the local NGOs acted as a brake or a manacle to resist the onslaught of Western model of development and humanitarianism, and tried to achieve their own goals.

my inquiry about the personal stake of the VAVA leadership. “Most of us *might be* Agent Orange victims. Who knows? Many of us, including myself, were in the military during the war. We served in the South and passed through areas sprayed by Agent Orange,” said Hoang. Hoang himself felt that his health was failing of late, as his age progressed. But Hoang did not get himself tested for dioxin levels in his body, he said, because if he were found to be an Agent Orange victim, then it may affect the future of his children and grandchildren. What he was worried about was not so much the illnesses and disabilities that they may suffer in the future, but rather the psychological and social effects of risk such an identity implied.

The acknowledgement of disabled or diseased individuals as victims of Agent Orange had little or no relevance for therapy or medical intervention, and the benefits they might receive from the government would be insufficient compensation for these psychological and social costs it implied. Fifty dollars, which went long way in countryside, added little to the coffer of these middleclass elites in Hanoi, where the cost of living was rising rapidly. Perhaps, this situation strengthened the equation of Agent Orange victims with poverty in popular discourse. On the one hand, there were victims who were forced to live in poverty because of their disability; on the other, there were middleclass elites who *knew* the circumstances of the poorer victims and could file grievance on their behalf in international and national arena.

Despite earlier reluctance on the part of the government to make the issue of Agent Orange political, now the nation needed the movement and the movement needed the victims. But the kind of victims it needed was of a particular type. As I discussed in chapter 2, the Agent Orange movement was framed in terms of both justice and reconciliation; that is, justice *contra* the US government and the chemical manufacturers, but also with the purpose of reconciliation between the people who fought each other during the war. Whether they were ARVN (South Vietnamese Army) soldier or Viet Cong guerrillas, or even American GIs, they all suffered from the same



chemicals and the same horrors of war. But in many aspects these differences in history reasserted themselves in practice.

This may explain why children with birth defects became the most representative victims of Agent Orange. What these children represented belonged to no nation, no faction of the war. They were bare humanity with no political affiliation, barrenness of meaning furthered by their disability. The question was what happens to those victims of atrocities whose images were summoned to the cause of peace and justice.

### ***Victims for the Future***

The world is full of horrors. There is nothing new about that. We all know this. We have seen the photographs of decapitated bodies, heard many stories from the sites of massacres. We do not doubt the good intentions of the producers of these images and stories. To expose the horror and the suffering of the victims is the first step to mobilizing the public against the warmongers—or so we are told. Or in most cases, at least, we hope to forestall future violence that might cause other such suffering—*elsewhere*. Images and stories of horrors are *lessons* for the present and *future* generations (just like the suffering of the victims of toxic disasters today is a fable for tomorrow's potential victims). It is this selflessness we demand of the victims of atrocities for the sake of peace elsewhere, and the violence that this appropriation entails that needs to be scrutinized.

Each time the lessons of war and peace are requested, the victims of hideous crimes are summoned and are asked to expose their suffering; the more shocking the stories they tell, the greater the efficacy of the messages of peace—or so it is thought. Such showcasing of the victims of atrocities has been criticized by many people, including anthropologists. Arthur and Joan Kleinman (1997), for example, have cautioned us that the representations of the most poignant, distressing, and sympathy-provoking images commodifies suffering, as if victims' suffering can be capitalised for certain ends. Veena Das (1997) also warns us that the iconification of suffering that

bears witness to past violence and injustice may have its own violent implications by denying the victims the opportunity to take hold of their own future, and freeze them in the memory of that violent past. These insights remind us that the representation of suffering in the course of demanding justice and redress is a tricky business. In the midst of the fervour for justice, something gets excluded; someone is sacrificed and turned into a martyr who suffers – silently and eternally – for the rest.

The worst may be images. Images expose the violence inscribed on the victims' bodies, which the beholders can scrutinize at a safe distance. Susan Sontag suggested that the moral qualms people may have about the images of the others' suffering can be generalized to sight in general. She writes, 'sight is effortless; sight requires spatial distance; sight can be turned off' (Sontag 2003: 118). Images seen faraway from the site of suffering are particularly problematic because that distance frees us from the immediacy of the others' suffering to ponder, and to choose what to see, what to feel, and what to do.

Is this true? Certainly some images and stories do cause visceral responses in us, despite ourselves. Human bodies turned monstrous through abomination of nature or through sinister acts of torturers—despite the disgust and rejection these images elicit within us, one may yet find, in the emotional reaction to such images, a hope for action for the sake of peace. There is a need to think about the consequences of monstrosity, not only because monstrosity is an idiom frequently mentioned in relation to Agent Orange, but also because there is a suspicion that 'monstrosity' is precisely what lies at the limit of humanity, and defines it.

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“Just look at these photos! Then, you would know what Agent Orange did!”

The air conditioner above our head hummed quietly at the foreign relations division of VAVA in Hanoi. Ms. Mai rushed to a cabinet beside her desk. Her teary eyes wandered around the room. Her hands seemed to tremble in irritation.

I had visited the VAVA office in Hanoi several times before, each time pestering Ms. Mai for some scraps of information about the organization and its activities. Today, I was asking her how VAVA identifies the victims of Agent Orange when scientific evidence was so uncertain. It was a genuine curiosity on my part. I knew that it was a very difficult and costly process to medically ascertain the causality between any given diseases and Agent Orange exposure. My question was a pragmatic one: how do they decide who should get their support in the context of scientific uncertainty?

But it seemed to have given her an impression that I was sceptical about the harm done by Agent Orange. Ms. Mai scrambled among the piles of files, and returned with an album. ‘Look at it!’ she said nervously, as she thrust the album toward me. The album was full of photographs of children with deformity. It was a terrible sight: heartrending.

Nowadays, the popular imagination of Agent Orange is fixed on the image of malformed babies. Among the whole array of congenital defects attributed to Agent Orange, what fills the popular imagination is not so much the relatively minor but more common defects like clubbed feet and harelips, but the rarer and shocking cases of hydroencephaly, spina bifida, or conjoined twins. For people like Ms. Mai, the images of severely deformed babies spoke for themselves—and I agree too; if Agent Orange did this, who would deny that it was an abominable, terrible thing? When reason and evidence cannot testify for the victims, the emotional appeals of images may be their only resort.

In July of 2008, there was a series of exchanges on the Vietnam Studies Group email list on the topic of the ‘grotesque’. In Vietnam, congenital malformations in children affected by Agent

Orange are called '*quái thai*', or monster births. And one of the anthropologists specialising in Agent Orange issues commented that it was 'painful' to see Agent Orange victims described as examples of the 'grotesque'. That remark sparked a short debate on the listserv. Another anthropologist responded that the association of Agent Orange with 'grotesque' and 'monster' is not so much the product of Western imagination, but a part of local imagining. It is something that we, as anthropologists, should be attentive to, she said; not something to be denounced outright. During her fieldwork in the hospitals where expected-mothers came for prenatal screening tests, she found that many women spoke about Agent Orange. The news about Agent Orange spooked them, haunting their imagination. One woman she interviewed even told her: "In school I learnt that '*quái thai*' refers to something that is not a human being anymore." They were not simply disabled or deformed; they were monsters, no longer humans. But by stepping outside the realm of the human, it seems, *quái thai* also came to bear something of a universal human quality. Pamphlets and media representations of Agent Orange victims often used the photographs of terribly deformed children—say, Siamese twins or children with microencephaly or spina bifida. Of all this public display of abomination, the display of dead and deformed fetuses submerged in a solution of formaldehyde was particularly striking.

In an alcove set up at the centre of the exhibit in the War Remnant Museum in Saigon, a glass tank of about a foot by two showcased the bodies of dead fetuses. A set of Siamese twins. A fetus with a bloated head. Visitors passed by it casually, betraying no emotion as far as I could tell. Some cast momentary glances at the tank as they glided through the various displays of the museum. Few stopped long enough to allow the visceral response it may have caused to settle in.

Then a group of local high school students gathered around it, squatting right against the glass tank, and examined the bodies in close proximity, as they casually chatted along. One of the girls was sipping at her soft-drink from a straw. A boy pulled out a camera and everybody posed in front

of the disfigured fetuses and took a shot.

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In an article on the Body Museum in Germany, anthropologist Uli Linke (2005) pondered over the question of the personhood of a human corpse. The Body Museum, which began its tour in the new millennium, featured the dissected bodies of real humans, preserved through new plastination technology. The exhibition of plastinated corpses in the Body Museum represented second death for the corpses. This transformation of the dead to an object without personhood, however, took a convoluted route. The new technology of preservation through the use of silicon and plastic made the ‘resurrection’ of the dead possible. It allowed a production of the “illusion of life after death”, in the context of a ‘fetishism of the real’ in late modernity. But this ‘real-ness’ of the ‘life after death’ remained an illusion for Linke. The observers were distanced from the smell of organic decay and, more importantly, detached from the personhood of the dead.

The erasure of the personhood of the dead also took on an institutional form. Ordinarily, in most German states, where the exhibition started, the display of corpses is not permitted; but the court ruled that since “plastinated bodies are not ‘corpses in the eyes of the law’”(18), they are permitted to be displayed. The plastination legally transformed the corpses into objects by removing “all signs of personhood.” As Linke put it, “the dead are redesigned to become lifeless matter” through plastination.

Likewise, the dead fetuses preserved in formaldehyde and displayed in a glass tank lost their personhood and became pure *evidence* of the atrocity of American imperialism. Their contorted bodies were blank slates free for those who advocate on their behalf to inscribe meaning. Ironically, this existence, pushed to the fringe of humanity by disability and deformity (and thus permitted to be displayed or aborted), had become the most generic and representative form of human existence. Perhaps it was hoped that these signatures of monstrosity would jolt us from our

everyday life, and compel us to recognize the shared humanity of distant suffering. But the shock it produces in us could also result in shifting our gaze from individual sufferers toward generalised injustice and horror at large. Perhaps this risk of neglecting the individual sufferers was why one of the anthropologists in the debate I mentioned was troubled by the “aestheticized approach” of some of the representations of Agent Orange victims, which “fails to recognize [that] we are dealing with human life and suffering.”<sup>13</sup> But what are we to do, as anthropologists, when the local activists select an ‘aestheticised approach’? What if it is the most convenient and effective way to gather support for the victims of Agent Orange in Vietnam?

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<sup>13</sup> In later correspondence, she told me that she would not consider VAVA’s approach an ‘aestheticized approach’, because they are also providing aid.

## CONCLUSION

The biography of Agent Orange was entangled with a series of false starts and unexpected turns. The discovery of phenoxy-herbicides like 2,4-D and 2,4,5-T involved a 180 degree change in perspective from the search for growth factors to the search for weed-killers. Used in wartime during the 1960s, these herbicides intended for increasing agricultural production led to the destruction of livelihoods for people living in Vietnam. Even then, at the time when Agent Orange was being sprayed, there were no pre-existing moral concepts that allowed the protestors to convincingly argue that the use of Agent Orange was evil. The necessary concept was invented in the course of the protest (Zierler 2008). The most salient crimes of Agent Orange— namely, its ability to cause birth defects and cancers—were the kind of toxic effects of chemicals that people became aware of in the 1960s in the industrialised countries. When the decision to use chemical herbicides in the Vietnam War was made, even the idea that one needed to test the carcinogenic or teratogenic effects of chemicals was only beginning to emerge. The prosecution of Agent Orange, therefore, had to involve *ex post facto* application of laws, morality and scientific concepts that were as much the products of the misdeeds of Agent Orange as the basis of the obloquy against them.

This history of the dialectical formation of morality and scientific concepts confounds any effort to assign responsibility and accountability for the hazard of Agent Orange. In chapter 3, I discussed a rising awareness of the unforeseen consequences of scientific discoveries, and their relation to the anti-Agent Orange sentiment that would develop during the 1960s. As scientists in the post-World War II era realised, scientific work was a collective endeavour. The discovery of the chemical components of Agent Orange, for instance, was not the work of one mind; the categorical identity of one chemical substance also required constant renewals as the conceptual

frameworks (growth, death, or regulation) associated with it changed. This is a standard argument in science studies (following Thomas Kuhn's (1996 [1962]) discussion on the relationship between paradigm and scientific discovery, for example). The question is: what are the implications of such paradigm shifts in science on the responsibility and moral values associated with substances like chemical herbicides which came to be known to have toxic side-effects only after being released into the world? In the 1950s and the 60s, the scientists who were involved in the Society for the Social Responsibility of Scientists gradually realised that it was not sufficient for scientists to be responsible for the *intended* consequences of their scientific work on the society.

The privileging of intention in moral discourse and criminal jurisprudence, following Kantian tradition, began to face challenges through the emergence of postcolonial theories in the 1960s. In Vietnam, the destructive 'intent' of Imperial America was diffused throughout the bureaucratic and social structure of the nation such that it was next to impossible to identify criminal intent sufficient to indict any high ranking US officials for war crimes like genocide and ecocide in Vietnam. At the same time, the consequences of their 'unintended' acts and decisions were devastating. In chapter 4, I explored the meaning of 'intention' in the context in which the knowledge of the consequences of the act, such as spraying of Agent Orange on the vast area of Vietnam, was either absent or still inchoate.

'Intention' was a critical concept in the litigation of the Vietnamese Agent Orange victims. As I discussed in chapter 5, the defendants were accused of violating international law. The other concept, critical though less developed by the plaintiff attorneys, was that of 'poison.' The defendants certainly knew something about the toxic effects of Agent Orange. But in considering



the idea of imputing ‘intent to poison’ on the knowledge of the toxicity of substance, one of the confounding factors is the conceptual shift in the idea of poison in the 1960s. In chapter 6, I argued that new types of poisoning—namely, teratogenesis, carcinogenesis and mutagenesis—which were previously unaware by the public, surfaced as issues of utmost importance in the second half of the 1960s.

Should the use of chemical substances later known to have such toxic effects be considered a poison weapon? Under international criminal jurisprudence, Judge Jack Weinstein argued that Agent Orange should be characterised as what it purports to be—that is, a herbicide—even if it may have inadvertently caused poisonous effects.

No doubt the legacy of Agent Orange marks an appalling episode of history; its terrible health consequences and dramatic destruction of the environment shocked the world since the 1960s, and its terror reverberates even now. But when looked at closely, the reality of its effects and the horror of its nature become more blurred and subtle. During the decades that passed between the end of the war and the turn of this century, when Agent Orange became widely spoken, the consequences of Agent Orange were largely buried under drastic changes in life brought by the experience of war.

The ethnic minorities of A Luoi, who had very little interaction with the Kinh majority and the rest of the nation before the war, now speak Vietnamese, cultivate paddy rice, ride motor bikes, and pursue higher education in cities. Thus, unlike the cases of toxic disasters in industrialised societies – such as Seveso, Minamata, Chernobyl, and Love Canal to name a few—the toxic effects of Agent Orange were not the only tragedy in an otherwise serene life, nor the only source of disharmony and cause for grievance in places like A Luoi valley.

Thus, renewed (or new) invocation of Agent Orange in twenty-first century Vietnam, as a *cause celebre* of the humanitarian justice movement, was the beginning of new experiences and new social relations. One should not exaggerate the implications of this new knowledge of risk and causation on the lives of the people in places like A Luoi. As we saw in Chapter 2, old social boundaries like ethnicity and family history of the participation in war exerted their influence on who are considered to be Agent Orange victims. And because many people were quite aware of arbitrariness of financial aid associated with Agent Orange, unlike in Adriana Petryna's (2002) work on biological citizenship after Chernobyl, in Vietnam, 'differential citizenship'—which gave differential entitlements to state resources depending on different family history—contributed to biological uncertainty for victims of Agent Orange. The national and international discourse of the Agent Orange movement called for solidarity of previous enemies (e.g. former ARVN soldiers and former Viet Congs) based on common etiology of diseases they suffered; but this discourse also had an effect of concealing resilient schisms within the society, which became manifest in the uncertainty of biological identities among the disabled people of Vietnam.

This uncertainty is not necessarily a bad thing. Because identification as a victim of Agent Orange has implication for victims' family members, who would be seen as 'at risk', it is desirable for some people to keep this question unanswered. Risk perception—or risk discourse—therefore, needs to be seen in relational terms, as something affected by interlocutors and other people present.

Humanitarian efforts to bring aid to the victims of Agent Orange do not arise purely out of sympathy for the victims. As I suggested in Chapter 10, humanitarian aid for the victims of Agent Orange was in part a form of protest against the United States government and the chemical

industry for not owning up to their responsibilities to compensate the victims. In this context, the national imaginary and representations of Agent Orange victims in contemporary Vietnam coalesces around the striking images of infants with congenital deformities . Certainly, such shocking images are useful in eliciting sympathy for the victims and in bringing international support and financial aid to the individuals.

In pre-World War II Europe, Walter Benjamin (1985) realized how people had become alienated from their experiences through a constant bombardment of shocks. In an essay on Charles Baudelaire, Benjamin claimed that people were ‘cheated out of experience’ because of the constant exposure to stimuli that numbed their senses. But in order to retrieve that lost experience, one needed to embrace the shock experience. Benjamin’s mission was to theorise how to awaken—through shocks—the slumbering masses that are anaesthetised by the trauma of industrial modernity. Isn’t this the gist of what we are experiencing now in relation to media images of violence faraway?

Richard Rorty argues that “the fact that the emergence of the human rights culture seems to owe nothing to increased moral knowledge, and everything to hearing sad and sentimental stories, [leads us] to the conclusion that there is probably no knowledge” that can ground universal morality (1993:119). What we need to do, therefore, is not to reason with the brutal tyrants by invoking the truth about innate human nature, but to engage in a ‘sentimental education’ whereby ‘students’ are sensitized to the cruelties and sufferings of others through an argument of images.

But what does this entail for those sufferers who become the *paradigm* of this so-called education, whether in a peace movement or activism for the cause of human rights? The victims, whose images are conscripted in the struggle for peace, disappear in the process of becoming

images. What happens to the principle-less, ideology-less, politically inert victims, who continue to live despite their suffering?

Sam Gregory (2006), an activist-anthropologist who had been working with a video advocacy program called WITNESS, argued that one of the critical strategic concerns for him was to know how to navigate the necessity for efficacy (“achievement of impact”) and the necessity for more authentic and detailed testimony. He thought that in the long run detailed and “authentic” testimonies would serve advocacy better. But in some cases, “an analysis of the particularity and nuance of an issue or testimonial story may undermine it as an advocacy for a particular action or response”. So the activist sometimes ends up choosing “a moral outrage that has the power to overwhelm the potential for bearing genuine witness” (202-203). But is there no way out of this shock-or-nothing conundrum?

One of the themes explored in this thesis is the interplay between singularity and generality. In *Totality and Infinity*, Emmanuel Levinas (1969) questioned the generalising (‘thematizing’ in Levinas’s language) tendency of the Western academic tradition. The task of social sciences is often thought to be to shed light on the social elements of reality that transcends the experiences of particular individual; that is, ‘social context’ or ‘social forces’ that were behind the behaviours and thoughts of individual actors. Levinas was critical of this reduction of the singularity of individuals (which he calls ‘the Other’) to an incident of social roles or a manifestation of certain social forces. Singular events and experiences of particular individuals were assimilated into generalised narrative of wider history and political movements. In this transaction, do we not risk losing sight of the particular suffering of particular individuals?

To both the US military leaders and anti-Vietnam War protesters of the 1960s, the war in

Vietnam was a surrogate for wars elsewhere. As Jean-Paul Sartre said, the US military wanted to “show all the oppressed and exploited nations that might be tempted to shake off the American yoke by launching a people’s war” against them. For the accomplishment of total submission of a colonial people, it would have been better if Vietnamese never surrendered until they were wiped off the surface of the earth. This was the implicit genocidal intent discernible from the logic of American war in Vietnam, according to Sartre.

But how easily a nation becomes a symbol, a battle, a surrogate for struggles elsewhere! If the US military sought to make the conflict in Vietnam an example for other conflicts elsewhere in the world, the protesters likewise returned its spear-tip by fortifying their rhetorical defence of Vietnam *in order to defend the world*. The law of action and reaction bound them to the same fate on the back of the wraith-like existence of Vietnam.

In contemporary Vietnam, the suffering of the victims of Agent Orange may also become a parable—a lesson for the future suffering elsewhere. Through the politics of humanitarian justice movement for the victims of Agent Orange, the suffering of the victims is being turned into a mirror for the suffering of the entire nation, an example of the crimes of American militarism, and a warning about the irresponsible acts of agrochemical industry, which continued to pour toxic chemicals and agricultural products into market without proper testing. But in this process, we also risk shifting our gaze away from the everyday experiences of the actual, flesh-and-blood victims and their families. My intention in this thesis was to resist the narratives of grievance, and glean the subtle consequences of the politics of Agent Orange in the dilemmas and contradictions faced by the families of victims of Agent Orange and their supporters.

**APPENDIX 1: DISEASES AND CONDITIONS COVERED BY AGENT ORANGE STIPENDS IN THE UNITED STATES AND IN VIETNAM, COMPARED TO US  
INSTITUTE OF MEDICINE: *VETERANS AND AGENT ORANGE 2008*.**

	<b>IOM Veterans and Agent Orange 2008</b>	<b>US Veterans Administration</b>	<b>Vietnamese <i>Che do chat doc</i></b>
<b>Sufficient Evidence of Association</b>	Soft tissue sarcoma (including heart)	soft tissue sarcoma (specified)	soft tissue sarcoma
	Non-Hodgkin's lymphoma	Non-Hodgkin's lymphoma, Lymphoma	Non-Hodgkin's lymphoma
	<b>Chronic lymphocyte leukemia</b>	chronic lymphocytic leukemia	
	Hodgkin's disease	Hodgkin's disease	Hodgkin's disease
	Chloracne	Chloracne	Chloracne
<b>Limited of Suggestive Evidence of an Association</b>	Laryngeal Cancer	Larynx cancer	Larynx cancer
	Cancer of the lung, bronchus or trachea	Cancer of the lung, bronchus or trachea	Cancer of the lung, bronchus or trachea
	prostate cancer	Prostate cancer	Prostate cancer
	Multiple myeloma	Multiple Myeloma	Kahler's disease
	AL amyloidosis	AL Amyloidosis	
	Early-onset transient peripheral neuropathy	Acute and subacute peripheral neuropathy	Acute and subacute peripheral neuropathy
	Parkinson's disease	<b>Parkinson's Disease</b>	
	Porphyria cutanea tarda	Porphyria cutanea tarda	Porphyria cutanea tarda
	Hypertension		
	Ischemic heart disease	<b>Ischemic Heart Disease</b>	
	Type 2 diabetes (mellitus)	Type 2 Diabetes	Type 2 Diabetes
	Spina bifida in offspring of exposed people	Spina bifida	Spina bifida
<b>Inadequate Insufficient Evidence to Determine Association</b>	or neonatal or infant death and stillbirth in offspring of exposed people. Birth defects (other than spina bifida)	Certain Birth defects (specified)	Birth defects, congenital malformation
	to Hepatobiliary cancers (liver, gallbladder and bile ducts)		unusual births
	Chronic peripheral nervous system disorders		<b>Primary liver cancers</b>
	*		<b>Mental disorders</b>

\*diseases thought to have inadequate evidence of association also include: Cancers of the oral cavity, pharynx, or nasal cavity; cancers of pleura, mediastinum, and other unspecified sites in respiratory system and intrathoracic organs; esophageal cancer, Stomach cancer, Colorectal cancer, pancreatic cancer, bone and joint cancer, melanoma, nonmelanoma skin cancer; breast cancer; cancers of reproductive organs; urinary bladder cancer; renal cancer; cancers of brain and nervous system (including eye); endocrine cancers; leukemia (other than specified above); cancers at other and unspecified sites; infertility; spontaneous abortion (other than after paternal exposure to TCDD, which appears not to be associated); Childhood cancer; neurobehavioral disorders (cognitive and neuropsychiatric); Neurodegenerative diseases other than Parkinson's disease; Respiratory disorders; Gastrointestinal, metabolic and digestive disorders; Immune system disorders (immune suppression, allergy, and autoimmunity); Circulatory disorders (other than hypertension and ischemic heart disease); Endometriosis; Effects on thyroid homeostasis

## APPENDIX 2: INTERNATIONAL LAW OF WARFARE

There are many problems with international laws, including its dubious origins, contradictions, and ineffectiveness, but there is nothing more paradoxical than its relation to war. Writing in the inter-war period, Walter Benjamin (1968) claimed that there is an ineluctable link between law and violence. War, which temporarily suspends peace time law, is nonetheless legal. But law is also under the threat by war, in which belligerents can nullify its effects by brute might. In particular, international laws embody a perpetual risk of perversion by the individual states who, through war, can found new laws (Derrida 1992). This bleak realism is reflected in the controversy over the regulations of the use of nuclear weapons. In 1996, International Court of Justice issued an opinion regarding the legality of the use of nuclear weapons in the case of legitimate self-defence. The court ruled in a split decision that it cannot “conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a state would be at stake” (Bederman 2001:23). When the state’s survival itself is at stake, there is no law that can stop the state from using whatever means to ensure its survival.

Even if we are not talking about such an extreme case, the laws of war seem to be such a flimsy concept. Nonetheless, the regulation of warfare has been a significant aspect of international laws for centuries (Bederman 2001). Since the ancient times, rules of warfare prohibiting certain weaponry (poisons, for instance) or military tactics were enforced through codes of honour and mutual treaties. In pre-modern Europe, scholars like Francisco de Vitoria and Hugo Grotius wrote treatises on ‘just war.’ These documents based largely on religious thinking also became quasi-legal documents.

Most scholars points to 1856 Paris Declaration as the beginning of the modern laws of war (Kennedy 2006, Bederman 2001, Robertson 2006). It was then that the idea of ‘one sovereign, one military’ became the norm, and the sovereigns’ true destiny promised in Westphalia was codified. The sovereigns became the only legitimate purveyor of violence that straddled both national (policing) and international (unrestrained origin of law and war) arenas. Since then, a series of conventions and conferences on war followed. In the meetings of the diplomats in Brussels in 1874, the Hague Peace Conferences in 1899 and 1907, Geneva Convention in 1925 and 1949—many other Protocols and Conventions followed, attempting to regulate the conducts in

warfare. These conventions, however, are still mired with many problems. One of the issues that came up in the Agent Orange litigation was the question of scope and specificity.

Customary laws are unwritten laws that are nonetheless binding in practice. They take into account of history and the “general practice accepted as law” (Bederman 2001: 15). To show that something is a customary international law, one must show that 1) the rule has been followed as a ‘general practice’ and that 2) it has been accepted as law. Often, however, it is difficult to show whether the states were following any customs as a rule or as a matter of courtesy.

Underlying this discussion was the question about the nature of international law of warfare; in other words, whether international laws are to be considered as contracts between nations or something based on common moral condemnation of usage of poison in warfare. It is often said that while the Hague Convention was conceived in the positivist tradition (i.e. it was an agreement between states without particular moral value behind it), the Geneva Convention is said to be inspired by moral abhorrence people felt toward the horror of the World War I (Robertson 2006).

Following the experience of the horror of gas warfare during the World War I, the United States took an active role in drafting of international convention that prohibited the future use of chemical gas weapons in war. Yet, when the Geneva Protocol was brought to its own Senate for ratification, the proposition was met by fierce opposition from the chemical industry, Army Chemical Corps and other lobby groups. The ratification of the Protocol was stalled and remained on the docket at the Senate until President Truman finally withdrew it in 1947. (The issue of the Protocol was not reopened until 1969, when President Richard Nixon resubmitted it to the Senate for ratification.) At the time of Vietnam War, the United States was one of the only major powers in the world not to have ratified the Geneva Protocol.

Still, this does not mean that the norms embodied in the Protocol had no normative effect on the United States. International law is said to consist of two types of laws: codified conventional laws set by conventions or treaties, and customary laws, evidenced by widely accepted custom or mutual observance of norms in practices of the nations. In 1943, President Franklin Roosevelt denounced the first use of chemical and biological weapons by explicitly declaring that “the use of such weapons has been outlawed by the general opinion of civilized mankind.” In practice, chemical weapons were never used during the Second World War. This led to the argument that the norms promulgated in the Geneva Protocol had already become a customary international law,



binding to all nations regardless of their statutory status.

### APPENDIX 3: ECOCIDE AND JEAN PAUL SARTRE'S *ON GENOCIDE*

It is all good to make up new words, or to expand the meaning of already existing words to advance our moral claims, political agendas or artistic sensibility. But one of the most important aspects of language is that it is not of our own making (Cronon 1996: 34). They have their own genealogy and common usages. The sentiments they can be expected to elicit in the listener when they are uttered are founded on these semantic history.

The word 'genocide' has its own genealogy (legal, biopolitical and moral) and a prototype (Jewish holocaust). Its connection to social Darwinism and the ideology of eugenics, its origin in World War II and Nuremberg trial—these specific history defines the word as much as the codified definition in Genocide Convention of 1948. The first thing Sartre does, therefore, is to homogenize this semantic history and make genocide a practice that existed from time-immemorial. "The word 'genocide' is fairly new," he said. "It was coined by the jurist Raphael Lemkin between the two world wars. But the fact of genocide is as old as humanity" (Sartre 1968: 57). Sartre then goes on to cite the most authoritative statute of genocide, which is the Genocide Convention of 1948. (The meaning of the gesture is clear; that he is sticking faithfully to the original definition.) The Genocide Convention, however, is quite clear in defining genocide on the basis of intent, which is the main obstacle in assigning the word genocide to the situation in Vietnam.

The prototype of genocide was the recent historical experience of Jewish holocaust. Its main choreographer Adolph Hitler was not at all shy about proclaiming his evil intent to exterminate the Jews, which added to the monstrosity of the act. There was no pretence that murdered Jews were 'collateral consequences'; they were put to death just because they were Jews. Americans, on the other hand, had made no such proclamations about Vietnamese. But were the genocidal intention *implicit in the facts*? Were Vietnamese killed for the "simple reason that they are Vietnamese?" (Sartre 1968: 58). These were the questions Sartre tasks himself and others present at the International Tribunal to consider (Here, he never asks if 'implicit intention' is equivalent to 'explicit intention' in moral and legal sense. Neither does he ponder if 'implicit intention' as such is an oxymoron. Having tasked us with these questions, he happily moves on to a historical examination of the structure of the world order and war.). Patterns of historical forces

may make it visible for us genocidal intent implicit in facts. Sartre departs from the historical prototype of Jewish holocaust almost immediately, and settles his gaze on the new prototype of genocide which he identified as the “war of example.”

The bourgeois nationalism of industrial nations necessitated wars of a new type. It was the total war embroiling the entire population of the nation. Even though the participation of the working class in politics was but a foil, the “democratic façade of bourgeois nations” gave birth to a sense that one’s fate was entangled with the fate of the nation in time of war. However, the First World War never became genocidal. And this was because of the balance of power.

But since 1830, there has been “countless acts of genocide outside Europe.” (if ‘genocide’ is what he is examining, shouldn’t he refrain from using the word unexamined?) With their overwhelming military might, the Western Powers achieved easy victories against people of Africa and Asia (This is a theme that Sartre would revisit several times in the paper in order to tease out the logic behind massacres of civilians in colonial wars.). The ‘colonial war,’ as he called it, was intrinsically genocidal in character. “They aimed at the destruction of ‘a part of an ethnic, national or religious group’ in order to terrorize the remainder.” (He cites one section of the Genocide Convention, but note how the section, “in order to terrorize the remainder”, is Sartre’s addition. The original excerpt from the Convention he cites is “a part of an ethnic, national or religious group”. But doesn’t all war entail this?) The next topic he discusses is on ‘cultural genocide’, (which is blatantly his own invention.) The maintenance of colonial order required ‘admonitory massacres’ to intimidate the natives into submission. But, by the time of Vietnam War, “this blatant aggression kindled the hatred of civilian population, and since civilians were potentially rebels and soldiers, the colonial troops maintained their authority by terror—by perpetual massacre.” What this entailed was not just massacre but ‘extermination’.

[V]illage burned, the populace subjected to massive bombing, livestock shot, vegetation destroyed by defoliants, crops ruined by toxic aerosols, and everywhere indiscriminate shooting, murder, rape and looting. This is genocide in the strictest sense: massive extermination.” (Sartre 1968: 73).

Colonialism is an economic system which is laid over the native society, and this restructuring of native society entails ‘liquidation’ of “all characteristics of the native society.” Fortunately, for the natives, at least this motivation of economic exploitation protects them against

“physical genocide,” because extermination of the natives entails loss of unpaid labour. (So now genocide is said to have both ‘cultural’ and ‘physical’ types. Later he would add “psychosocial” to this typology of genocide.)

#### APPENDIX 4: POISON STORY

In the mid-1850s, the story of ‘Styrian arsenic eaters’ was causing a small sensation in Britain (Burney 2006). The story originated in a paper on *Viennese Medical Weekly* by an adventurer named Dr. Von Tschudi, which was reproduced in *Chamber’s Journal* by a physician named Dr. Johnson. Von Tschudi had returned from his trip in a Hungarian region of Styria with a story of “an extraordinary practice of arsenic-eating.”<sup>1</sup> The practice was particularly widespread among peasant youths, and had “twofold object in their hazardous indulgence.” One was to promote “fresh healthy aspect, and a certain degree of obesity”. The other was to “render themselves more airy or lighter—to facilitate respiration in ascending mountains.”

These arsenic eaters began their practice with a small grain of arsenic the size of a lentil, taken a few times a week. Then this amount was gradually increased. By the time they were habitual users, some individuals were taking what was ordinarily thought to be a fatal dosage of arsenic. Somehow, they displayed no trace of chronic arsenical poisoning (Bentley and Chasteen 2001). The only time they manifested symptoms resembling arsenical poisoning was when the arsenic-eaters were suddenly obliged to abstain from taking the poison. As an adventurer versed with the habits and practices of exotic people around the world, Von Tschudi likened this practice to “the oriental opium eater, Indian and Polynesian betel-chewer, Peruvian cocoa-chewer” and corrosive sublimate eaters of Bolivia.

This story quickly spread among the British population in the 1950s. To the dismay of someone like a British physician Dr. W. B. Kesteven, they even began to see some emulators of arsenic eating in Britain. In a series of rebuttal to this story, Kesteven complained how “eager credence [had been] given to mere marvels by person untrained in scientific scepticism” (Kesteven 1856b). As a scientific man, Kesteven berated at how the story was a “pure fable” with no scientific evidence other than Von Tschudi’s “traveller’s license”.<sup>2</sup> It was true that, even in places like Britain, small amount of arsenic had been in use as tonic given to sick individuals or horses.

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<sup>1</sup> Von Tschudi cited in Kesteven (1856a).

<sup>2</sup> (sounds like anthropologist’s ethnographic license)

But its use on healthy people to increase beauty and health was unthinkable. What really troubled Kesteven, however, was that Tschudi's story was not only a sham, but it also posed dangers to the society by giving the criminals another safe-haven from prosecution.

In the first half of the nineteenth century, murder by poisoning suddenly appeared as an object of fascination in England (Burney 2006). Between 1790 and 1850, the number of murder trials involving poisons increased exponentially, from what was a handful per decade to over one hundred cases in the decade between 1840 and 1850.

Poisoning, for Englishmen at the height of Industrial Revolution, was both an object of fascination and abhorrence. It was also, says historian David Burney, distinctively Italian. Its image of sophisticated intrigue and refined corruption symbolized the decay at the height of Roman civilization. But if poisoning had been the instrument of high politics in Rome, poisoning in Victorian England was far more commonplace. No longer a coveted weapon of Senators and aristocrats for political assassination, poison was now employed more liberally for more mundane reasons by jealous wives and husbands, or impatient relatives at the deathbed of a wealthy patron. As a commentator on *Illustrated Times* declared in 1856, murder by poisoning was becoming the 'crime of the age.'

Poisoning was also a 'crime of civilization' (Burney 2006: 12). Victorian commentators spoke of effeminacy of crimes by poisoning. Unlike bloody murders of unbridled passion which characterised the crimes of previous age, the Victorian poisoner was a character of calculating deceit, master of disguise and secrecy. The inscrutable poisoners lurked deceptively nearby, betraying no symptoms of their malicious intent within. As in Zizek's dictum, "Neighbour is the

(Evil) Thing which potentially lurks beneath every homely human face” (2008: 16); anonymous intimacy of the poisoners was both the object of fear and fascination. During this period, three quarters of murder trials involving poisons took place between blood relatives or relations by marriage. Sixty percent of the accused were women. And in nearly 70% of the cases, the poison of choice was arsenic.

Arsenic was a common poison in Europe since the Middle Age and Renaissance (Whorton 1974). In the nineteenth century England, for example, it accounted for over 70% of murder trials involving poison (Burney 2006). It was available in the form of white powders which could be slipped into food or drinks and fed to the unsuspecting victims. Over the years, physicians such as Dr. Kesteven who were often summoned to solve the mystery of such deaths became experts in recognizing acute arsenic poisoning.

It was no surprise that Dr. Kesteven found the story of Von Tschudi to be of criminological concern. Within a few years of its publication, there were several murder trials in Britain which involved arsenic substance. To Kesteven’s aggravation, in one instance, the counsel for the accused cited Von Tschudi’s story to claim that the deceased had ingested the poison on their own accord after reading the story on *Chamber’s Journal*. The society already plagued by the “‘felon literature’ of modern times [which had] already made many too wise in the art of chronic and secret poisoning,” now had to contend with Tschudi’s bogus story (Kesteven 1856b: 756). Curiously, nowhere in his articles, did Kesteven express concern for the public health hazards of chronic poisoning such a practice may hold.

#### **APPENDIX 5: AGENT ORANGE AND KNOWN POISONS**

Say, *gelsenium elegans*, which I discussed last chapter. Lethal Dosage 50 (or dosage at which 50 % of the cohort dies) for mice when administered orally was 25 mg CAF or 125 mg fresh leaf/kg.<sup>3</sup> LD<sub>50</sub> of arsenic alkali for rats was 70mg/kg. Acute arsenic poisoning is induced in human

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<sup>3</sup> The lethal dosage of *gelsenium elegans* was 25 mg/kg (LD 50 was 15 mg/kg. LD50 for TCDD dioxin is 1µg/kg for

at the dosage be between 100 to 300 mg/kg (Ratnaike 2003). TCDD has a very wide specie variation. For instance LD<sub>50</sub> for male guinea pig was 0.0006 mg/kg, while for rabbits it was 0.115 mg/kg (Schwetz et al 2003).<sup>4</sup> Hamster is about 1.0 mg/kg.<sup>5</sup>

There is no known lethal dosage for humans, but considering how Victor Yushchenko's blood serum TCDD dioxin level was 0.108 mg/kg (and he is alive), it can be suspected that humans lie somewhere between rabbits and hamster (Sorg et al 2009). 2,4,5-T containing 10 ppm TCDD is a poison comparable to other known 'poisons' like arsenic for guinea pigs, but not for rabbits and hamsters, or humans. This, however, is if we restrict ourselves to lethality. For example, chloracne in humans is supposed to occur in individuals with blood serum TCDD level somewhere above 1000 pg/g (0.001 mg/kg). This corresponds to 100 mg/kg of 2,4,5-T at 10 ppm. Then, insofar as chloracne is also a serious toxic effects, one might say that 2,4,5-T with 10 parts per million TCDD dioxins is also a poison.

We do not get off the hook quite so easily, however, because Weinstein tasks us with another test. He says that on average, the herbicides sprayed in the form of emulsified liquid was dispersed at a rate which corresponds to 3 gallons of 2,4,5-T per acre.<sup>6</sup> This corresponds to 5.05 g per square meter.<sup>7</sup> TCDD contained in this is  $5.05 \times 10^{-5}$  g/m<sup>2</sup> or approximately 0.05 mg/m<sup>2</sup>. Assuming that average person weighs about 50 kg, if all chemicals that fall on one square meter area would be absorbed by the individual (which is unlikely), the TCDD absorbed by the individual will be about 1000 pg/g. At this dosage, it is hard to say, one way or the other if the exposure would result in chloracne. In very unlucky circumstances, depending on the wind, aberration in TCDD concentration, individual susceptibility, or through repeated exposure, it is also possible that this amount of chemicals sprayed would result in chloracne. Is this called a poison?

#### **APPENDIX 6: RISK ASSESSMENT**

Roughly speaking, there were two models of dose-response relationship. One was linear model which took radiation carcinogenesis as its model, and the other was threshold model, which

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guinea pig, and 1mg/kg for hamsters. which is a measure indicating the dosage at which 50% of the cohort dies,

<sup>4</sup> I am mixing here single oral dosage with blood serum dosage, but I this should not make too big difference in terms of order of magnitude.

<sup>5</sup> For 2,4,5-T containing 10ppm TCDD, this corresponds to 60 mg/kg, 11,500 mg/kg, and 100,000 mg/kg.

<sup>6</sup> apparently this amount is 4 pounds per acre (corresponds to in the US.

<sup>7</sup>  $3 \text{ gal/acre} \times 3.79 \text{ l/gal} \times 1 \text{ acre} / 0.405 \text{ ha} \times 1 \text{ ha} / 10000 \text{ m}^2 = 28.1 \times 10^{-4} \text{ l/m}^2$ .

$2.81 \times \text{ml/m}^2 \times 1.80 \text{ g/ml (2,4,5-T density)} = 5.05 \text{ g/m}^2$

assumed the existence of a threshold below which no effects can be expected. Because former assumed no threshold level, it tended to give lower tolerable dosage level, but since there was no consensus on which model to use, different countries used different models.

Risk assessment involved taming of uncertainties in many different steps. Risk assessments of toxic chemicals like dioxins generally involve 1) hazard identification, 2) dose-response evaluation, 3) extrapolation of experimental data to human health effects and 4) exposure assessment to determine the particular risks of disease or deaths. But each of these processes is often fraught with difficulties and uncertainties.

The epidemiological data, which should provide the statistical correlations between the toxins and the health hazards, are rarely useful for developing quantitative estimates of risk because of the scarcity of human data. This means that the experimental studies on animals are usually used to obtain the dose-effect relationship. And under the guideline established by each agencies, this data is extrapolated to come up with the models for the risk to human health.

Because a considerable uncertainty remains regarding the molecular events leading to cancers, hazard identification is never complete. The whole endeavour of risk assessment usually boils down to the question about models. Toxic chemicals like dioxins exist virtually everywhere in trace amount, so the task of the agency is to decide upon what should be a 'tolerable level of contamination'. In determining this, the agencies like USEPA must adopt a dose-effect model of the toxins which is based on the understanding of the mechanism of its carcinogenicity (Silbergeld and deFur 1994).

EPA adopts what they call 'LMS (linearized multistage model)' for their dioxin regulations. The assumption here is that dioxin has a direct effect on DNA. Cancer is a multi-staged process involving 1) initiation, 2) proliferation, 3) progression of the proliferation and 4) rapidly growing tumour. After the initial actions on the genes, there may be another step which triggers the proliferation of its effects. This step may be caused by the continual exposure to the carcinogens or may result from other endogenous hormones and steroids, which are called 'promoters'. Experiments show that dioxin has both promoter-like and initiator-like function. According to Silbergeld and deFur (1994), dioxins do act on genes to cause cancer: the question is whether it affects the gene expression or gene structure (I suppose the latter implies mutation). Each of these theoretical choices supports different dose-response models and thus has policy implications.

EPA's adoption of a no-threshold LMS model was based on the studies of radiation and other chemical mutagens. But dioxin is generally thought to act more like a promoter than an initiator of carcinogenesis. The theory of mechanism of dioxin's toxic effects involving Ah receptor also points to a threshold model. Thus depending on which models these regulatory agencies use, the limit they set becomes different.

#### **APPENDIX 7: *BI NHIEM AND RISK***

Nga, one of the girls who worked at the guesthouse in Aluoi, came into my room with a broom in her hand, peaked over my shoulder at my computer, and asked, "What are you doing?"

"I am taking notes on things I've heard and saw," I stopped my hands and answered. I was just going over the notes from visits to VAVA in Danang from the previous year, and it occurred to me that she might have an answer to what I was pondering over. "Hey Nga, what does 'bi nhien' mean?"

Bi nhien, as far as I understood, meant 'contaminated.' It was the word people often used to describe Agent Orange victims, when they found the word "nan nhan" ('victim' or literally, 'sufferer') too political. In places like VAVA in Danang, people were also using the word 'nghe nhien' to refer to people who may be Agent Orange victims. The pre-fix 'bi' was usually used in a passive voice, exclusively for something negative. So it was akin to saying 'suffering from X', as in bi dau, (be in pain) or bi om (be sick). Nghe, on the other hand, suggested 'suspicion.' The staff at VAVA or Red Cross explained that they use this word to refer to people who may be Agent Orange victims, when they were not sure whether their illnesses were caused by exposure to Agent Orange. But does 'bi nhien' mean being 'exposed', as in having been in contact with dioxin, for example, or does it meant suffering as a result of this exposure?

To my inquiry, Nga answered that people are 'bi nhien' dioxin, if they are sick as a result of dioxin. She was definitely not bi nhien dioxin, since she was not ill. Then, how do you express the state in which one is exposed, but no illnesses have manifested yet?

"Do you have dioxin in your body?" I asked, feeling a bit guilty for asking such a question.

Looking flustered by my question, Nga said, "I don't know. I, don't know. I don't think so. I don't know." Like many of the young Kinh people who settled near district centre in the post war era, Nga thought that she was not exposed to dioxin, or if she were, the amount is so little that she had no need to fear. For them, risks of dioxin were of two types. One was historical exposure



during the war. The effects of this exposure can be passed down from parents to their children. The presence of any family members with Agent Orange related diseases, therefore, signalled risk for other members of the family. The second is geographical. There were several specific sites, like the former US airbases, where dioxin was concentrated. Anywhere else, risk of exposure was negligible. In a sense, this was according to the scientific evidence gathered by Hatfield scientists.

#### **APPENDIX 8: RISKS AND DISASTERS**

Often the discourse of risk begins with an incident of a hazard, and proceeds from there in a reversed logical and temporal order. Take, for instance the aftermath of the accident at Bhopal, India, in 1986. In her introduction to *Learning from Disaster*, Sheila Jasanoff (1994) argues that the accident at Union Carbide factory in Bhopal had a major impact on things like: risk managements, legal practices, transnational industrial policies and practices; and even the scientific and medical researches on the impacts of hazardous technologies. Accidents are ‘untoward’ events, which nobody desires. Yet, as it became clear in many of the legal contestations that followed such accidents, they are neither unforeseen nor unpreventable. In legal contestations where the accountability for a *specific* accident is sought for retroactively, an accident as a chance event is transformed into a *general* condition of risk: something ‘waiting to happen’ (ibid.: 4). Thus, risk discourse is re-constructed in the aftermath of a disaster. But one needs to look at this dynamic for specific cases. In case of Agent Orange, harm has never acquired the solidity of ‘disaster’ because its reality was scattered among the statistical pattern of individual cases.

Is this reconstructed risk different from the risk that existed before the accident? Most certainly. Risks do not exist without their naming. But as if through some bad magic, the hazards already taken place are perpetually getting hijacked by the discourse of risk. Toxic disasters not only alert us to the risks of future hazards; but this concern for future risks contaminates the present experiences of the victims. Because the victims often have no shared identity nor political voice prior to the identification of the ‘toxic disaster’ as such, without the causal interpretation of the tragedy, they cannot form a collective identity nor gain acknowledgement of their suffering. But since epidemiology, which is the scientific discipline often called upon to comment of causal theories, insist that their findings are about ‘risk factors’, rather than causation, strictly speaking, this collective identity of the victims is negotiated in terms of risk. Thus, unless an accident as a random chance event is turned into a *general* risk ‘waiting to happen’—i.e. a preventable and

predictable consequences of defunct industrial designs and carelessness or illegal military tactic for which someone is liable—the victims' suffering and the collective identity formed around it become tenuous.

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