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University of Natural Resources and Life Sciences, Vienna

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Learning in Indigenous Mountain Forest Communities. Case studies in Northern Thailand: White Hmong (Miao), Sheleh Ladhulsi (Lahu), and Pgak'nyau (Karen) Peoples.

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Abstract English

The Hmong, Lahu and Karen people of Thailand are traditionally *forest peoples* and *foragers*. Their traditions and *country skills* have developed in concert with how they modified the landscape around them. *Swidden* agroforestry is a disappearing practice as their societies transition to more settled agricultural existences. The cultural legacy in how they live, material culture and framing of forest dependency are still found in their approach to *learning* for natural resource management. Their *knowledge*, *know-how* and *wisdom* can serve both them and the wider world. Once marginalized, they are becoming more integrated into mainstream Thai and global society. They want to share their skills and knowledge with others.

This research uses an exploratory research approach with co-performative witnessing to engage with the context in the area around Chiang Mai, Thailand. Semi-structured interviews, field visits, conversations and analysis of audio-visual material of the indigenous people are used to generate data around the topic of learning within a case study approach. Artistic Research Methods (ARM) were used as a way to engage with research subjects, communities and experts and thus explore the ecology of learning connected with indigenous communities. Data was analysed with the design science methodology of pattern research within the tradition of Christopher Alexander.

Notable was the finding of *Hmong Forest Walks*, as a foraging practice applicable for ethno-medicinal and herbology usage. *Hmong Forest Gardens*, learning buildings for natural resource management, and the *Thai earth building movement* are described. Encountered *learning fora,* which contain *pedagogical approaches* transferrable to other locations, were The *Karen Lazy Man School* and the *Lahu Learning Circle.*

Keywords: peasant economics, foraging, ethnobotany, forestry, artistic research methods (ARM), intangible cultural heritage, pattern language

Abstrakt German, Deutsch

Die Völker der Hmong-, Lahu- und Karen in Thailands sind traditionell Waldvölker und Wildbeuter. Ihre Traditionen und Fähigkeiten haben sich im Zusammenhang damit entwickelt, wie sie die Landschaft um sie herum verändert haben. Wanderagroforestry verschwindendet zunehmend. Die Gemeinschaften gehen zu einer sesshaften Landwirtschaft über. Das kulturelle Erbe der Art, wie sie leben, ihre materielle Kultur und Waldabhängigkeit finden sich immer noch in der Art, wie sie sich dem Erlernen der Nutzung natürlicher Ressourcen nähern. Ihr Wissen, ihr Know-how und ihre Weisheiten können ihnen und anderen dienen. Sie wollen ihre Fähigkeiten und Kenntnisse teilen.

Diese explorative Arbeit nutzt ko-performative Beobachtung im Kontext der Region um Chiang Mai, Thailand. Semi-strukturierte Interviews, teilnehmende Beobachtungen, Gesprächsanalysen und audiovisuelle Materialien der indigenen Völker werden genutzt, um das Lernen in Fallstudien zu untersuchen. Auch *Artistic Research Methods* wurden eingesetzt, um sich mit Einzelnen und Gruppen der indigenen Völker und so die Ökologie des Lernens der indigenen Gemeinschaften zu erforschen. Die gesammelten Daten wurden u.a. mit der Methode der „pattern languages“ analyisert, entlehnt aus den Designwissenschaften in der Tradition von Christopher Alexander.

Hauptergebnisse der Arbeit sind die Beschreibung der „Waldwanderunen“ der Hmong, eine Praxis des Sammelns für ethno-medizinische pflanzenheilkundliche Zwecke, der Hmong „Waldgärten“, Gebäudeformen für das Erlernen der Bewirtschaftung natürlicher Ressourcen sowie des thailändischen „Earth Building Movements“. Lernforen, deren pädagogische Ansätze zu anderen Orten übertragbar sein sollten, sind die *Lazy Man School* der Karen und die Lernzirkel der Lahu.

Schlüsselwörter: bäuerliche Wirtschaft, Wanderagroforestry, Ethnobotanik, Forstwirtschaft, Artistic Research Methods (ARM), immaterielles kulturelles Erbe, Mustersprache

Abstract: ภาษาไทย, Thai

ชาวม้ง ลาหู่ และกะเหรี่ยง เป็นกลุ่มคนที่มีขนมประเพณีบนวิถีการอยู่กับป่าและการล่าสัตว์เป็นอาหาร ประเพณีของพวกเขาและทักษะการใช้ชีวิตอยู่กับธรรมชาติของพวกเขา ได้พัฒนาอย่างสอดคล้องกับการสภาพภูมินิเวศน์รอบตัว วิถีการเกษตรที่ต้องเผาป่าเพื่อการเพาะปลูกค่อยๆ หายไป เมื่อสังคมของพวกเขาได้เปลี่ยนผ่านมาสู่รูปแบบการเกษตรที่ลงหลักปักฐานมากขึ้น มรดกแห่งวัฒนธรรมของการดำเนินชีวิต ทั้งในเรื่องวัฒนธรรมกี่ยวกับเครื่องใช้ไม้สอยหรือการเกษตรที่พึ่งพิงป่า ยังคงดำรงอยู่ให้เห็นได้ในวิถีการเรียนรู้ที่เกี่ยวกับการจัดการทรัพยากรธรรมชาติ องค์ความรู้ของพวกเขา ทั้งในด้านวิถีการใช้ชีวิตและภูมิปัญญา สามารถนำมาใช้เพื่อการใช้ชีวิตของตัวพวกเขาเอง และของโลกในวงกว้างอีกด้วย จากการที่เคยเป็นกลุ่มคนที่อยู่ชายขอบ บัดนี้พวกเขาได้เชื่อมประสานเข้ากับสังคมไทยและสังคมโลกได้มากขึ้น เพื่อที่จะดำรงอยู่อย่างมีประสิทธิภาพยิ่งขึ้น พวกเขาได้เรียนรู้วิถีชีวิตแบบอื่นๆ และพวกเขาก็ต้องการจะแลกเปลี่ยนทักษะและความรู้กับผู้คนอื่นๆ ด้วยเช่นกัน

งานวิจัยชิ้นนี้ ได้ใช้รูปแบบการวิจัยเชิงการสำรวจค้นคว้า พร้อมกับทฤษฎีการศึกษาเชิงประจักษ์ ด้วยกระบวนการมีส่วนร่วมในกิจกรรมที่เป็นประเด็นของพื้นที่ที่ทำการศึกษาวิจัย ได้แก่ จังหวัดเชียงใหม่ของประเทศไทย การวิเคราะห์ข้อมูลในการศึกษาครั้งนี้ ผสมผสานไปทั้งจากการสัมภาษณ์ การลงพื้นที่ การสนทนาและวิเคราะห์จากเทปบันทึกเสียงของชนเผ่า ภายใต้กรณีศึกษาที่อิงกับกระบวนการศึกษาวิจัยอย่างมีศิลปะ (ARM) ได้ถูกนำมาใช้ เพื่อเป็นหนทางแห่งปฏิสัมพันธ์กับเนื้อหาวิชาของงานวิจัย ทั้งในระดับชุมชนและระดับผู้เชี่ยวชาญ และดังนั้นมันได้สำรวจค้นคว้าถึงวิถีระบบนิเวศน์แห่งการเรียนรู้ ที่เชื่อมต่อได้กับชุมชนคนพื้นถิ่น การวิเคราะห์ข้อมูลจัดทำบนหลักการแห่งรูปแบบการศึกษาวิจัยของคริสโตเฟอร์ อเล็กซานเดอร์

รูปธรรมผลลัพท์ที่ได้ที่เห็นได้ชัดคือการค้นพบเรื่อง *การเดินป่าของชาวม้ง* ในฐานะแห่งการออกป่าล่าสัตว์ เพื่อการฝึกฝนเรียนรู้ที่ขยายผลไปสู่การค้นพบเรื่องการรักษาแบบดั่งเดิมและสมุนไพรพื้นบ้าน *สวนป่าของชาวม้ง* เป็นการเรียนรู้เรื่องการจัดการทรัพยากรธรรมชาติ และ *ขบวนการสร้างดินไทย* ได้มีการระบุถึงอีกด้วย การได้มีส่วนร่วมใน *การเรียนรู้วิถีป่า* ที่เต็มไปด้วย *หลักแห่งการเรียนรู้ร่วมกัน* ที่ส่งผ่านไปยังพื้นที่อื่นๆ ของ *โรงเรียนคนชี้เกียจของชาวกะเหรี่ยง* และ *วงจรแห่งการเรียนรู้ของชาวลาหู่* และยังได้มีการจัดทำรูปแบบและคู่มือเพื่อการเขียนอีกด้วย

คำสำคัญ: เศรษฐกิจชาวนา การหาของป่า สมุนไพรพื้นถิ่น การป่าไม้ กระบวนการศึกษาวิจัยอย่างมีศิลปะ (ARM) มรดกทางวัฒนธรรมที่จับต้องไม่ได้ ภาษารูปแบบ

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Abbreviations

ASEAN	Association of Southeast Asian Nations
BOKU	Universität für Bodenkultur Wien (University of Natural Resources and Life Sciences, Vienna)
CMU	Chiang Mai University
FAO	Food and Agriculture Organization of the United Nations
FAST-Ossiach	Forstliche Ausbildungsstätte Ossiach des Bundesforschungszentrum für Wald
FORRU-CMU	Chiang Mai University Forest Restoration Research Unit
HRAF	Human Relations Area Files
IUCN	International Union for Conservation of Nature
NGO	Non Governmental Organization
NRM	Natural Resource Management
NTFPs	Non-Timber Forest Products (may include small wooden objects) cf. WFP
NWFP	Non-Wood Forest Product
P2P	Peer to Peer
PNV	Potential Natural Vegetation
QSBG	Queen Sirikit Botanic Garden
RFD	Royal Forest Department, a department in the
REDD	Reducing Emissions from Deforestation and forest Degradation REDD+ is an upgrade of the original REDD programme
TEK	Traditional Ecological Knowledge
TSF	Thai State Forestry
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization
WFP	Wild Forest Product cf. NTFP
WWOOF	World Wide Opportunities on Organic Farms (N.B. varied acronym history)

Units

Km	Kilometre 1000 metre
m	metre
masl	metres above sea level
ha	hectare 10 000 square metre
rai	1 600 square metre
kya	thousand years ago
mya	million years ago

A note on dates

There are different dating systems in the world. In Thailand the year is called the Thai Solar Calendar. From 1st January 1941 AD this has matched the Gregorian calendar, so that year began at the same time and was 2484 BE (Phibunsongkhram, 1940). BE means Buddhist Era. This is the official system, there are historically different datings, some regional dating, and varied astrological traditions within cultures too. While the year may be consistent with Gregorian equivalents the months are not, as lunar months and leap days, months and years means there can be variation between the two.

In most of the world, the accepted calendar is the Gregorian. It lists years as Before Christ (BC) and anno Domini (AD). This is gradually being replaced with Before the Common Era (BCE) and Common Era (CE). There also exists Before Present (BP), with the Present being from 1st January 1950 AD.

In most cases the Gregorian calendar is used here. Where not, it should be obvious in context. I have taken the dates as given in sources, rather than tried to calculate them. For websites that often have no clear date, I have used the online service http://cd.cs.odu.edu/ which eponymously claims to be "*Carbon Dating The Web*" (DCS, 1996; SalahEldeen and Nelson, 2013). As a result, the dates are to be treated with caution, though I believe them to be accurate enough for this work's purposes.

Likewise, other confusion may arise due to the nature of how sources are referenced in scientific texts. Here I have followed the Journal of Forest Economics, which uses a style guide set by Elsevier as Elsevier Standard Reference Style 2, which is "*2. Harvard style – Name–date style*" and a modified Harvard style. I have modified this slightly, and used the program EndNote (Bramer et al., 2017) for doing this. Under this system, dates are approximate publication dates, or of audiovisual material when the material was released as a recording. Quote sources are given by line numbers, and paragraphs indicated by *para.*. For audio-visual material, the source time is given in minutes. Names are given as found in the sources, several of these are nicknames, and the orthography of such names has been maintained.

A note on transliteration and language

There are different ways to write the different languages and even Thai lects in Latin characters. As a result, I have used the source spelling where I do this. Where there is no written source I used the spelling I think is preferred by the user. In some cases, I have used Thai writing or other ways of writing in references. Here again I have used the source formatting where I can. English readily borrows new words and has no language authority to tell me what is correct or not, but I have tried to use standard International English rather than any local variant within this work. Parentheses are used to give clarity where there may be different semantic meanings or understandings between languages over a term.

Bramer, W.M., Milic, J., Mast, F., 2017. Reviewing retrieved references for inclusion in systematic reviews using EndNote. Journal of the Medical Library Association: JMLA 105, 84.

DCS, 1996. Carbon Dating The Web, Old Dominion University, Norfolk, VA, USA, http://cd.cs.odu.edu/ Archived at http://www.webcitation.org/6knmANoBY Accessed 26.09.2016.

Phibunsongkhram, L., 1940. พระราชบัญญัติปีปฏิทินพุทธศักราช ๒๔๘๓(Calendar Year Act 2483), in: The Cabinet Secretariat; Office of the Prime Minister (Ed.), 57 (0 ก): 419. Royal Thai Government Gazette, Bangkok, Thailand, p. 4.

SalahEldeen, H.M., Nelson, M.L., 2013. Carbon dating the web: estimating the age of web resources, Proceedings of the 22nd International Conference on World Wide Web. ACM, pp. 1075-1082.

1 Introduction

Back in the mists of time, we are led to believe that creatures dragged themselves onto land. When they arrived, they found that, the land was already inhabited by plants. A forest was thus in existence long before humans evolved to take their place within it. Theories vary, about the place of hominids within forests, and what rôle deforestation or forest clearings (growth of savanna), played in hominid evolution. With waterside hypotheses (Vaneechoutte et al., 2011)[1], a riverine habitat mosaic model (Bailey et al., 2011), or a growing plains model with its savanna hypothesis (Bobe and Behrensmeyer, 2004) competing in the battle of ideas. Though the latter model predominates re human development, the scientific consensus from theorists is unanimous. Humans lived amongst and with treed areas through all of their existence.

Through much of that time, people sustained themselves in mobile, small bands and groups. Those groups, in the main gradually developed cultures, with their norms and practices; to live in a way that ecologically balanced, environment and the cultural world of man. The initial result of this was indigenous groups or tribes functioning in a world without overpopulation and over exploitation. This harmonious co-existence maybe called a *nature myth* (Kohak, 1998), which can be "*regarded as in some sense as true*" (Ibid.:"Abstract": para. 1). The ecological eye can see this as a time when the human population was in balance with their habitat in aggregate. As some of the groups began to culturally evolve into settled agricultural existences, they began to have a direct transformative impact on the planet. The Anthropocene (Ruddiman, 2003).

In modern times, mankind has largely escaped from the closeness to nature and has seen numbers wax ever greater, swelling to vast conurbations and megalopolises, which not only eat the Earth, but also homogenize and swallow-up the diversity that once existed in language, culture and ways of being too. Many learnèd folks, the wise of our times, have commented that such a process is not sustainable and we must look to a less intensive use of the natural resources we depend on (Kohak, 2011).

To understand how we might learn and teach from that older way of being it is important to see how we might function and teach members of our society to live in a more sustainable way. One way of gaining that knowing, which is the state of having knowledge[2] and wisdom[3], is by studying the diverse ways some have resisted and persisted despite the onslaught of modern globalization and rapacious capitalism. I believe that we should look to forest peoples (Chao, 2012) that have not been socialized into scientific forestry (Usher, 2009b) nor the Prussian

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[1] Most scientists do not favor this hypothesis now. The Vaneechoutte reference is recent, but the publisher has been questioned over their scientific reliability, so Vaneechoutte's book should be approached with caution.

[2] Knowledge is the assimilated feelings, facts, principles, theories and practices, which have been encoded as information through a process of learning European Centre for the Development of Vocational Training, c., 2014. A selection of 130 key terms, in: Tissot, P. (Ed.), Terminology of European education and training policy. 2 ed. Publications Office of the European Union, Luxembourg, p. 332. Knowledge can be divided into tacit and explicit knowledge. Tacit knowledge Polanyi, M., Sen, A., 2009. The Tacit Dimension. University of Chicago Press, Chicago, IL, USA, p. 108. is knowledge, which influences cognitive processing. However, the possessor of tacit knowledge may not necessarily express it nor even be conscious of it. Explicit knowledge is that knowledge, which a knowledgeable is self-aware of, including tacit knowledge that converts into an explicit form by becoming an "*object of thought*"Prawat, R.S., 1989. Promoting access to knowledge, strategy, and disposition in students: A research synthesis. Review of educational research 59, 1-41. Knowledge can be communal, individual or even outside people, such as book knowledge in a library.

[3] See page11 paragraph 4 for practical and theoretical wisdom explained.

schooling system (Gatto, 2000) for a greater understanding of the potentials, which are here today. We should do that before they are but forgotten memories, and legends of indigenous peoples (PFII, 2004), who no longer exist outside of the anthropologists' field notebooks, which no one reads anymore.

To learn from them we must understand what learning is for them and what modes it manifests in. Learning is the "*process by which an individual assimilates information, ideas and values and thus acquires knowledge, know-how, skills and/or competences*" (European Centre for the Development of Vocational Training, 2014:155-156).

Indigenous people, by marginalization, were forced to access learning from diverse, fractured sources. These have included foreign missionaries, national government school systems, television, social media and informal contacts with those from other cultures with their own agendas. Yet they have frequently kept their traditions and grounding so that they have a base to refer back to, whether those are family traditions, community elders, the spirit world or in intangible cultural heritage and material culture.

Exploratory research around the topic of learning and learning environments can give us indications about how we might adapt and adopt useful practices from this diversity. This thesis uses exploratory research and a constructivist approach combined with Artistic Research Methods (ARM) to seek out the ecology and facets of learning amongst some of the forest peoples of Northern Thailand.

More precisely the forest people around Chiang Mai were the focus of the investigations undertaken. Interviews and field trips from a base in Chiang Mai city were carried out in the surrounding villages of Ban Mae Sa Mai, Ban Khun Wang, Ban Nong Tao and Doi Mot village. The forest peoples focused on were the Hmong, particularly the *White Hmong* subgroup; the Karen, particularly the subgroup *Pgak'nyau* and the Lahu, particularly the subgroup *Lahu Sheleh*. All the communities were located in upland areas affected by national park designations. The communities were all agrarian with contemporary use of forest resources by the inhabitants.

Learning was researched around forest restoration, foraging of wild forest products and agricultural extension for organic modes of living. Also considered were forest gardens, learning circles and indigenous community level education. The material culture of architecture and learning buildings connected with natural resource management were analysed using the approach of pattern language research as developed in the tradition of Christopher Alexander. After preliminary research in Thailand February to April 2013, more in depth analysis of audiovisual material was carried out. The material was sourced from the internet, particularly social media, the contacts met in Thailand and material gathered during the preliminary research field trip.

1.1 Objectives

My principle objectives in this research were:

Objective 1: Discover how learning occurred around NRM amongst indigenous peoples in Thailand.

Natural resources are very managed in Europe. It is hard to find people using old-fashioned techniques, which have not been heavily influenced by our society, which is increasingly a mechanized, and specialist one. I wondered if I would see something different in marginal societies and from forest peoples. I thought I might encounter techniques, tools, and situations that better fit the purpose of natural resource management in a way that was different. I was not aware if this could be better or worse on any metric, but want to go and see what was there. Indigenous peoples seemed good populations to research as they had a cultural momentum, which is varied, and the ones I would research are forest peoples.

Objective 2: To see the broad setting as regards the physical environment (so the material culture of landscape).

I wanted to know where people learnt outside of formal schooling systems. How did they learn "*in the nature*"? Would it be possible to see particular buildings or structures that were purposive? To see this I would have to physically explore these landscapes. I wanted to capture the feelings and live that reality to describe it.

Objective 3: Seeking out the intangible cultural heritage and praxis as to how people learn.

I have spent decades going to heritage centres and farm museums and have seen the old tools that are often there. Behind these tools, there were traditional practices and often the tools are just right for a very specific job. It seems that standardization has removed many of these tools and sometimes the use has been forgotten. Along with the use would have been the cultures and practices about learning. I planned to seek out such old techniques and associated intangible cultural heritage and where possible see if these were describable.

Objective 4: Taking those things I found so that heuristics and pattern languages could be developed from them that people could use in other times and places.

I hoped I would save disappearing knowledge and help those that can benefit from this rescuing within indigenous communities, in Thailand and the wider world. I did not think Thailand was unexplored, but I did think I could gain from cultural relativism more than I would gain in Europe. I hoped that I could see some of the things that were useful to put into a pattern language. To do that I wanted a different perspective in order to proof the ideas I had for patterns already.

Objective 5: Seeing if there is peer-to-peer learning in the communities studied.

Michel Bauwens, who leads The Foundation for P2P Alternatives, based in Chiang Mai indicated that he knew little about current P2P praxis within indigenous peoples. Bauwens champions a futurist vision that peer-to-peer is a newly emerging paradigm (Bauwens, 2012), which will transform our society. If I could find evidence of widespread peer-to-peer techniques then this research would contest that view of it being a newly emerging paradigm, and finding

mutualism or a solidarity economy would allow us to think how we too could live and develop our green skills.

Green skills are "*abilities needed to live in, develop and support a society which aims to reduce the negative impact of human activity on the environment"*. (European Centre for the Development of Vocational Training, 2014:101). Specifically I want to see how peer-to peer supports g*eneric green skills,* which aid in awareness-raising or implementation of resource-efficient activities and *specific green skills* that are needed for protecting ecosystem services and biodiversity, and to reduce energy, materials and water usage (Ibid.).

Objective 6: Exploring individual learning in myself.

I wanted to use artistic research methods for introspection. As ARM is by its nature subjective and open to the interpretation as I choose to place on it then it has a more artistic than scientific element to it. Aggregating these critiques with others' viewpoints on their learning experiences can make it more scientifically useful, but that would be a different research project.

Such a project on how a mountain forester does become a professional in contemporary times has merit. We can look at past examples of guilds, family learning structures or on the job training and contrast them with the professionalization of modern degree systems, but I wanted to look away from such generalized educational research, which I think is already well covered by explorations in liberal arts degree programs toward a realm further away from academia. I wanted to do some living educational research (Carson and Sumara, 1997) and co-performative witnessing (Conquergood and Johnson, 2013). However, I wanted to do that from an artistic perspective as lived experience, as I had seen other artists approach learning in Finland (Hannula et al., 2005; Beloff et al., 2013; Das, 2015).

1.2 Metalevel considerations

I did not want to follow the formula of being shown how to do a standard study and then slavishly copying it in a slightly different location just to get a qualification. I was more inspired by, "*I believe in intuition and inspiration.*[…] *At times I feel certain I am right while not knowing the reason.* […]*Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution. It is, strictly speaking, a real factor in scientific research"* (Einstein and Shaw, 2012:97).

The aim to explore learning in myself relates to being self-critical, which can be seen as an artistic research method. Being self-critical is a good thing to be as a scientist, so that we may reflect on our practice and avoid hubris. Reflection on our practice and ourselves is characteristic of good social science. Such a learning method is by its nature subjective, and therefore open to the interpretation I choose to place on it. That subjectivity gives a more artistic than scientific balance to it.

Within artistic circles the clichéd phrase "What is art?" sums this up well (Groys, 2011). An artist's rôle is to question, not necessarily to answer. The way that questioning manifests is art. Exposure reveals the questions and subjectivities within arts based practice, yet it is the interplay between conscious and unconscious knowledge which is fundamental to achieving artistic output (Walker, 2009). Aggregating these critiques with others' viewpoints on their learning experiences can make it more scientifically useful, but that would be a different research project. I wanted to look away from such generalized educational research, which I

think is already well covered by explorations in liberal arts degree programs toward a realm further away from academia.

I want this research to be challenging to generate new approaches and thinking, yet still recognizable as a viable production on the topic of indigenous learning. Challenging preconceived paradigms and seeking controversy can be used to set-up straw men and make a work appear useful, but merely indicate a propensity to seek out the foolish and mistaken ideas of others. Not a hard task, as to err is human. Despite troubleshooting helping to root out wrong assumptions and consequent bad practices the danger of descending to a nit-picking effort to fault-find fails to build a new better reality, but focuses on making the best of a bad job. I aim to build on kindred perspectives and make something useful and practical from the thesis. I would rather build a new reality (Quinn, 1999).

My desire is to extend the approaches used beyond only scientific ones, to incorporate alternative views that may come from being trans-, cross- and inter- disciplinary[4]. I did not want

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[4] The nuances of meaning between these are:
An academic discipline is defined as "*An academic discipline, or field of study, is a branch of knowledge that is taught and researched at the college or university level. Disciplines are defined (in part), and recognized by the academic journals in which research is published, and the learned societies and academic departments or faculties to which their practitioners belong*" Wikipedia contributors, 2016a. Category:Academic disciplines, Wikimedia Foundation, Inc., Wikipedia, The Free Encylopedia https://en.wikipedia.org/wiki/Category:Academic_disciplines Archived at http://www.webcitation.org/6lXg0iElC .
Trans "*In practice, transdisciplinary can be thought of as the union of all interdisciplinary efforts. While interdisciplinary teams may be creating new knowledge that lies between several existing disciplines, a transdisciplinary team is more holistic and seeks to relate all disciplines into a coherent whole*" Wikipedia contributors, 2016b. Discipline (academia), Wikimedia Foundation, Inc., Wikipedia, The Free Encylopedia https://en.wikipedia.org/wiki/Discipline_(academia) Archived at http://www.webcitation.org/6lXf0ghE8.
Cross "*Cross-disciplinary knowledge is that which explains aspects of one discipline in terms of another. Common examples of cross-disciplinary approaches are studies of the physics of music or the politics of literature*" ibid.. This is where I wanted to use arts, to describe the natural resource management that I saw.
Inter "*knowledge extensions that exists between or beyond existing academic disciplines or professions. The new knowledge may be claimed by members of none, one, both, or an emerging new academic discipline or profession.*
An interdisciplinary community, or project, is made up of people from multiple disciplines and professions who are engaged in creating and applying new knowledge as they work together as equal stakeholders in addressing a common challenge. The key question is, what new knowledge (of an academic discipline nature), which is outside the existing disciplines, is required to address the challenge?" Sadkhan Al Maliky, S.B., 2014. Multidisciplinary in Cryptography, in: Abbas, N.A. (Ed.), Multidisciplinary Perspectives in Cryptology and Information Security. IGI Global, Hershey, PA, USA, pp. 1-28.. Perhaps these might be described as emergent properties.
Multi "*knowledge is associated with more than one existing academic discipline or profession.*
A multidisciplinary community or project is made up of people from different academic disciplines and professions. These people are engaged in working together as equal stakeholders in addressing a common challenge. A multidisciplinary person is one with degrees from two or more academic disciplines. This one person can take the place of two or more people in a multidisciplinary community. Over time, multidisciplinary work does not typically lead to an increase or a decrease in the number of academic disciplines. One key question is how well the challenge can be decomposed into subparts, and then addressed via the distributed knowledge in the community. The lack of shared vocabulary between people and communication overhead can sometimes be an issue in these communities and projects. If challenges of a particular type need to be repeatedly addressed so that each one can be properly decomposed, a multidisciplinary community can be exceptionally efficient and effective" Wikipedia contributors, 2016b. Discipline (academia), Wikimedia Foundation, Inc., Wikipedia, The Free Encylopedia https://en.wikipedia.org/wiki/Discipline_(academia) Archived at http://www.webcitation.org/6lXf0ghE8.. This is akin to the idea of A people and T people Haas, R., 2004. Usability Engineering in der E-collaboration. Ein managementorientierter Ansatz für virtuelle Teams. Wiesbaden: DUV.

to be confined to only scientific ways of learning, but to incorporate artistic ones too. This is because I work toward being human and holistic in approach, rather than greedy reductionist (Dennett, 1996; Sayer, 2010; Agazzi, 2012; Archer et al., 2013).

While learning is important in itself, to make a research work learnable from there is a question: Who will do that learning? Here the research would I hope save disappearing knowledge and help those that can benefit from this rescuing within indigenous communities, in Thailand and the wider world. To that aim I should consider the varied presentation ways which have been used in the past to present knowledge and show learning, particularly under the pedagogical movements of progressive education (Elias and Merriam, 2005a), and radical and critical education (Elias and Merriam, 2005b). Gardner's multiple intelligences (Gardner, 2011) leads to the conclusion that there can be different learning styles, which may include body-kinesthetic and spatial-visual and these should be considered for presentation of the knowledge from this research.

1.3 Locating the research in South East Asia

South East Asia may be split into Mainland South East Asia (Cambodia, Lao PDR, Malaysia (Peninsular Malaysia only), Myanmar, Thailand and Viet Nam) and Maritime South East Asia. There are some cultural and linguistic commonalities within these areas, which means from a human-social perspective they can be usefully grouped together as South East Asia.

Figure 1-1: Southeast Asia Political. Source: Modified by author free map at http://aseanup.com/free-maps-asean-southeast-asia/ Copyright: 2016 ASEAN UP.

Today the South East Asian countries which are shown on the map in Figure 1-1, with their shared heritages and ecologies, mixed-in yet distinctive peoples are coming together as a geo-political area called the Association of Southeast Asian Nations (ASEAN). They share a desire to focus on the commonalities rather than the things that set apart. Such consensus politics has been termed *"the ASEAN way"* (Anindhitya, 2012).

South Eastern Asia is usually synonymous with South East Asia. Mainland South East Asia as a whole is dissected by the large Mekong River and its ecological value has been recognized with "*biodiversity hotspot*" protection in various places (Asnarith, 2013). The Asian Development Bank describes that area as "*The Greater Mekong Subregion (GMS)"* (ADB, 2014). In addition to the Mekong River System the Chao Phraya River System dissects northern Thailand. Together they shape the context in how people regard the region, and at a smaller scale the watershed is how people relate to their local geography. Politically these rivers have an influence with

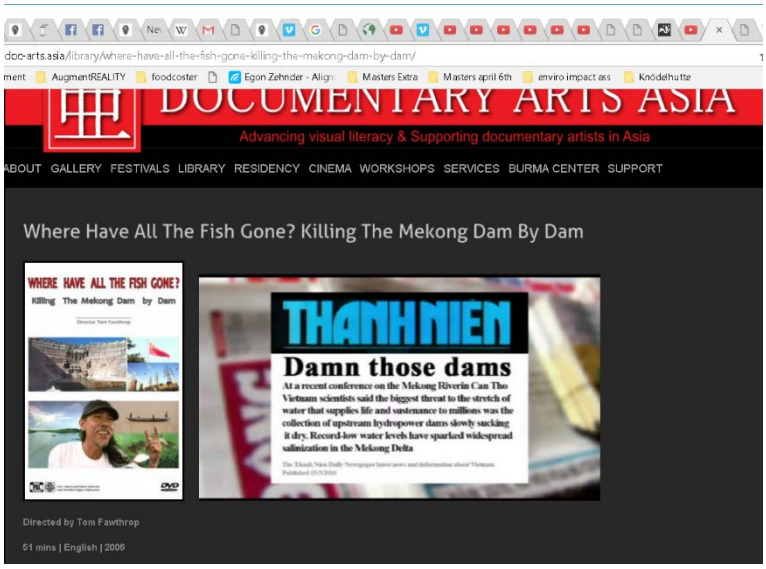

Figure 1-2: Damn politics. Source: http://www.doc-arts.asia/library/where-have-all-the-fish-gone-killing-the-mekong-dam-by-dam/ Copyright: - of movie, Eureka Films 2011; -of website, Documentary Arts Asia; - of composite image Marcus Petz 2016.

Dam Politics or damn politics, if you are against dams, as can be seen on the promotional website for the artivist documentary Where Have All The Fish Gone? In Figure 1-2, influencing much of the discourse around natural resources in the region (Nokelainen, 2008; Fawthrop, 2011). The region fits with the idea of Zomia, being roughly the same nations' upland areas (Scott, 2014). "*Asian Highlands… "refers to the mountainous area that includes southwest China (Yunnan province, part of Sichuan and eastern Tibetan Plateau) together with northern mainland Southeast Asia, lying 300-3000m above sea level*" (Xu, 2012).

The Greater Mekong Sub-region contains 5 "*triangles*" which are ways of describing areas with commonalities therein (Ishida, 2012). One of those triangles, which lies in the Mekong´s northern reaches is The Golden Triangle, which is notorious for drug production. Drug production, which was certainly a financially productive crop and perhaps better ecologically than the chemically laced replacements from an ecological forestry perspective (Elliott 2014, pers. comm., #6) has now changed. Instead of opium being grown, methamphetamines are produced in black labs. No longer are there hill tribers leading transient pioneer shifting cultural existences caught between militias on the edge of large impoverished markets. Times have changed from when there was a lack of power to enforce distant diktats from the West, United Nations (UN) or even remote National governments. Today the tribers are becoming villagized, peasantized and incentivized to produce different kinds of crops (Chin, 2009).

I did not research in the Mekong area, but instead in the *Chao Phraya River Catchment* area. I researched in *Chiang Mai Province,* which is shown below in Figure 1.3 and in Chiang Mai city, the location of which is shown in Figure 1-4.

Figure 1-3

Figure 1-4

Figure 1-3: Chiang Mai Province within Thailand (Left). Source: https://upload.wikimedia.org/wikipedia/commons/5/5c/Thailand_Chiang_Mai_locator_map.svg Copyleft: NordNordWest (self-made, using Thailand location map.svg) [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0], via Wikimedia Commons.

Figure 1-4: Chiang Mai Province showing Mueang Chiang Mai district (No. 2) where Chiang Mai city is located (Right). Source: http://en.wikipedia.org/wiki/File:Amphoe_5001.png Copyright: Ahoerstemeier [CC BY-SA 3.0 http://creativecommons.org/licenses/by-sa/3.0], via Wikimedia Commons.

Confusingly Chiang Mai can be written Chiangmai, as with many place names in the region; Viet Nam, Vietnam; Ban Mae Sa Mai, Ban Maesa Mai; or even the region itself Southeast Asia or South East Asia. Chiang Mai was once the capital of Lanna (Lan Na). Metropolitan Chiang Mai has sprawled beyond the city limits, so province, district, city can all be unclear in usage.

1.3.1 Research locations

Sites were selected based on convenience sampling. An artistic approach, which relied on serendipity (Hellström, 2010), was used in being prepared for suitable sites and then happening upon them. This approach was used as Thailand is quite unstable and what may appear a priori suitable sites or opportunities for research are found no longer to be so when seeking them out. This approach proved a successful one. I stayed in all the villages, usually for only a few days at a time, but for longer in Ban Mae Sa Mai, about 3 weeks there.

Ban Mae Sa Mai 18º51'58.3"N, 98º51'19.1"E the location of which relative to Chiang Mai is shown in Figure 1-5 is a predominantly Hmong community. The community is mixed with White Hmong and Blue Hmong (White Hmong: *hmoob njua* meaning Green Hmong) (Peng, 2007). I stayed with a Blue Hmong family and my most useful informant was a White Hmong man. The distinction between White and Blue re this thesis is insignificant in this mixed Hmong community. This village has a mountain terrain above it that reaches +1300 – 1400 masl.

The community was founded in the late 1960s and early 1970s it profited from opium production (Elliott, 2007). More recently, cabbages, lychees, tomatoes and widespread use of polytunnels have profitably replaced this source of land-based income (Ibid.). The community is the largest Hmong settlement in Thailand and has under 2000 people living there (Ibid., Peng, 2007). It is fairly centralized as a community with restrictions being applied on forest uses by the state authorities around the village and the drier upland area proving less desirable than lower down moister areas near the Doi Noi stream. Young people are generally holders of Thai papers and go elsewhere for education. Exact numbers are not possible to give due to the mobile nature of the population, poor record keeping by the Thai authorities and the increasing number of illegal workers in the village.

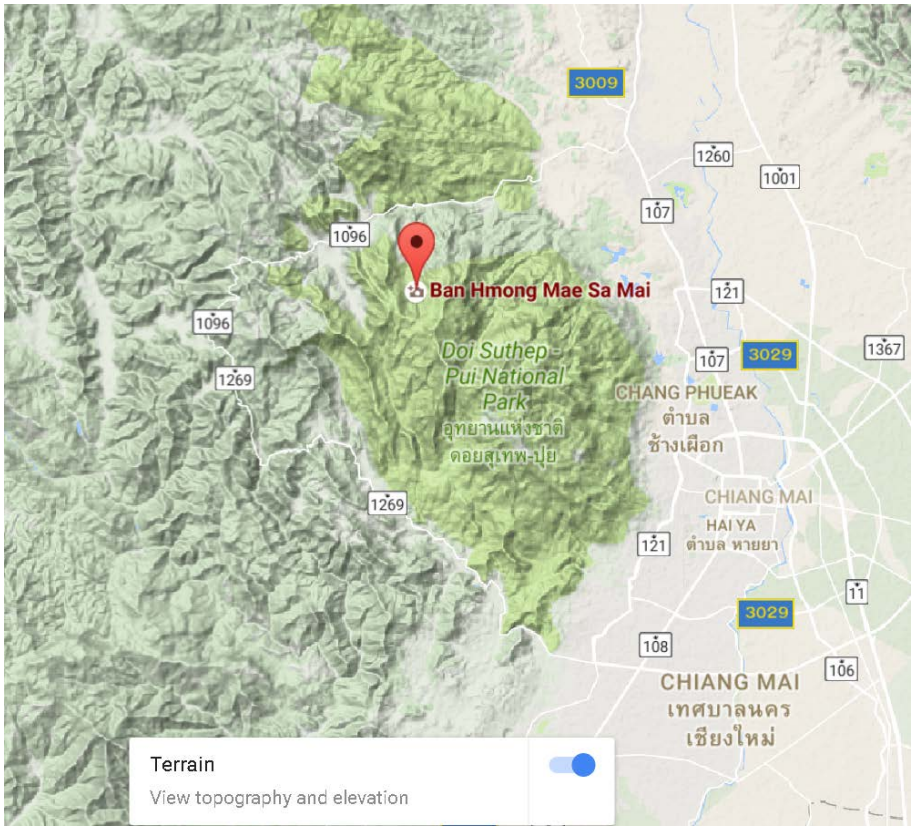

Figure 1-5: Ban Mae Sa Mai, physical map. Source: https://www.google.fi/maps and own work Copyright: Google

Ban Khun Wang 18º37'31.9"N, 98º30'52.4"E +1200–1300m the location of which relative to Chiang Mai is shown in Figure 1-6 is a predominantly Hmong and Karen mixed community. The village has a mountain terrain above it that reaches 2560 masl.

The village has had a long existing population of Karen people and more recently, Hmong have settled there. Now there is a move toward agriculture rather than totally, forest-based existence. This has been facilitated by the Khun Wang Royal Project that focuses on tourism in this national park around its specialties of chrysanthemum and lychee growing (Charasrum, 2010). Around 2000 people live in the village (Ibid.). Long establishment and Christianization means there is reasonably good access to schooling compared with Doi Mot or Ban Nong Tao.

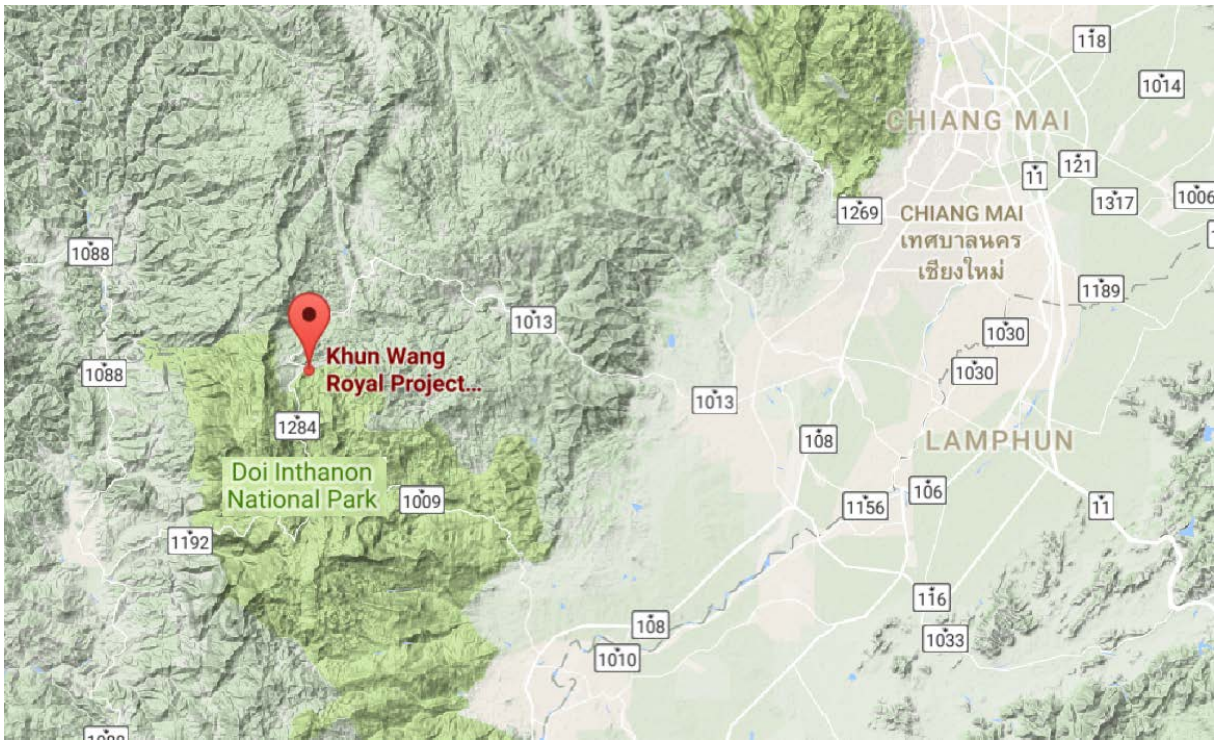

Figure 1-6: Khun Wang, physical map. Source: https://www.google.fi/maps and own work Copyright: Google

Doi Mot village 19º5'9.3"N, 99º20'49.2"E the location of which relative to Chiang Mai is shown in Figure 1-7 is a predominantly Sheleh Lahu community. Marked below is Doi Mot, the nearby mountain that reaches 1700 masl.

The community was founded in the 1970s and originally traded opium and hunting products, but more recently under the guise of development has been encouraged by Royal Project to move toward flowers under black plastic (Casidy, 2010). I estimate the population is a few hundreds. The village is quite dispersed, as the Lahu tend to live in stilt houses fixed to quite steep slopes. It increasingly is making money from tourism.

Doi Mot (also written Doi Mod) seemed to me based on some internet searches of key words using the Google search engine (https://www.google.fi) had a low volume of literature published concerning it, but a lot more touristy and popular culture references are appearing on social media due to the growth of the indigenous-based tourism that makes use of the cultural and ethnic wisdom found from this self-isolating population..

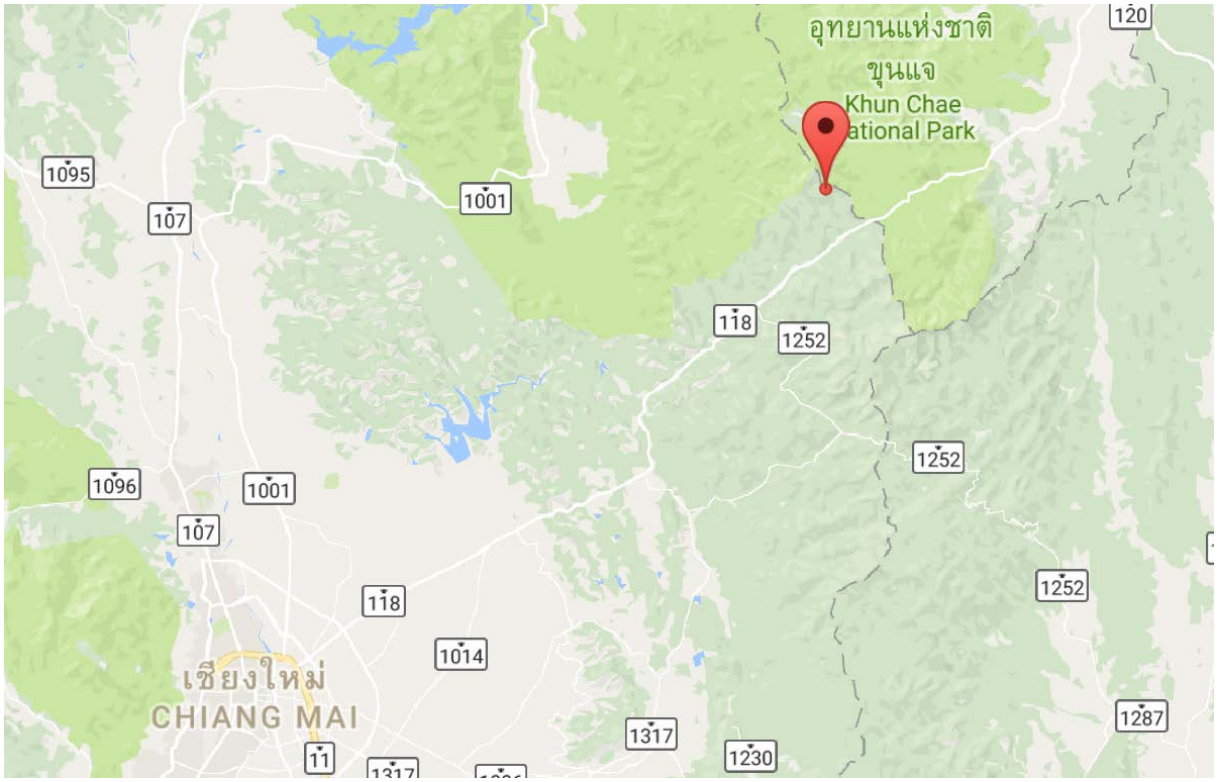

Figure 1-7: Doi Mot, physical map. Source: https://www.google.fi/maps and own work Copyright: Google

Ban Nong Tao 18°40'55.5"N 98°33'03.5"E +1000m the location of which relative to Chiang Mai is shown in Figure 1-8 is a predominantly Karen community. Within the district, there are approximately 4000 inhabitants, but they are dispersed in various villages. With rotational shifting cultivation, being replaced with more settled agriculture population numbers can be estimated, though there are not reliable figures available. The community has kept isolated in the past so educational level is difficult to assess and only recently has formal schooling become the norm.

Figure 1-8: Ban Nong Tao, physical map. Source: https://www.google.fi/maps and own work Copyright: Google

The Upper Mae Sa Valley was where my main research base was. I stayed in a village in this valley. The village has been given various names on the maps I have seen. These are Ban Mae Sa Mai, Ban Mae Sa Mae and Ban Hmong Mae Sa Mae. I will use Ban Mae Sa Mai in this thesis. Mae translates as watercourse, such as brook or stream. The village was divided into two separate villages and people may talk about the other village or refer to it in this way. While I was there I was told this was an administrative matter, and no-one referred to it as two villages, but only one village. The division meant more money for the now two villages, though Hmong clan politics may have influenced the motivation for division.

The village is not officially allowed by the Thai state to be there. It was formed via squatting (Thai term: *cap coon*) on state forest land (Yano, 1968). Ownership cannot be gained via such possession from the state forest designated land. Thailand does have adverse possession in its Commercial and Civil Legal Code, so squatters' rights can accrue (Yesilkaya, 2013). The legal system does allow ownership to come through use proven by tax documents or older registration papers (Vandergeest and Peluso, 1995; Hayami, 1997), but foreigners, which many Hmong are considered to be by the Thai state, are not able to own property in the form of land. So the village is de facto allowed to exist with inhabitants having possession, under the fiction that the land it is on was designated, as a national park with protections, after the village was founded.

The people can function and have usfruct from various plots of land which they have cleared and planted with crops or farm with polytunnels and other supposedly temporary structures. Reforestation activities led to designation of certain plots of land, which are then not available for such agriculture. Some of these plots I saw were marked with concrete posts and thus have been fully cadstrally surveyed and will be recorded in the land registry with clear land title.

There is a tacit agreement from the villagers, evidenced by the presence of maturing forest plots, to accept this process of formalizing plots and not disrupt it by destroying the plots or ignoring the work that is done by other actors from outside the village.

Nevertheless, while property rights are not secure for all the people in the village it does have state-sponsored services such as a school for the children, a church, community halls, a community owned guest house and some sports facilities. It maybe that it will be regularized in the future and gazetted as a village with an official name and good land title. Such a process usually means that some infrstructural standards will have to be implemented to be an officially recognized settlement.

The village is reached by a tarmac road rather than a forest road, though the tarmac does not spread out through all of the ways of the village. So there is some acknowledgement of its status.

The majority of the villagers are White Hmong, though there are some Blue Hmong there too and more recently irregular migrants from Burma who may be of varied ethnicities. I did not meet anyone of any other ethnicity while I was there.

This village and the whole valley have undergone a lot of different research. There is an extensive and comprehensive literature on it in several languages, English, Thai, Japanese, German and Spanish are some I have seen. A Google Scholar search on "Doi Suthep" which is the nearby mountain, and included in the name of the monastery - Wat Phra That Doi Suthep, and the nearby National Park – Doi Suthep-Pui National Park - in the valley yielded some 2380 hits. 167 of those hits contained "Hmong". A scan through those reveals most are to do with natural sciences, some ecotourism, particularly a proposed cable car project. None directly reference learning, though one refers to education policies for indigenous people. There are a lot on forestry, mostly from Chiang Mai University Forest Research and Restiration Unit (FORRU-CMU), but also other research actors in the area, which include the Thai Royal Forestry Department (RFD), Queen Sirikit Botanic Garden (QSBG), the Parks Department and other foreign collaborators and visitors.

In Ban Mae Sa Mai, I met some contacts who then took me on two occasions by motorbike for short stay visits to Ban Khun Wang. There was a shared predominant White Hmong ethnicity between the villages. While in Khun Wang, I walked around the village and saw the Khun Wang Royal Project. The project is a research and agricultural extension project that has innovated with the idea of agro-tourism, with visitors coming to see the work of the center. An article on the project reported that, "*Somchai Panya, head of the Khun Wang Royal Project, said most of the 2,000 residents were Hmong and Karen hill tribes and that the project covered mostly sloping hillside and valleys. He added that the Project offered a learning resource center for villagers on fruit and vegetable cultivation* (Charasrum, 2010:para 4).

Many crops are grown there, such as cabbage, bell peppers, sweet peas, broccoli and other cool weather crops. Fruits such as peaches, persimmons, kiwi and grapes are also grown. He added that there was a project to plant Chinese tea as well as chrysanthemums and carnations as cash crops (Ibid.:para 5).

"After harvesting, their crops and products are purchased by the Royal Project for further processing at the factories at Khun Mae Wak in Mae Chaem and then distributed to shops and grocery stores nationwide," he noted. He continued that the Khun Wang Royal Project has three

different areas of interest for tourists, agro tourism grown in demonstration fields, flower nurseries and fruit and vanilla production" (Ibid.:para 7).

This Khun Wang Royal Project is a Thai institutional agricultural and trading system, rather than a producer run cooperative that the New Theory would favor. Only some local people partake in it. It did not include the traditional practices my respondent engaged in. She never mentioned the place to me, though I did not directly ask her about it and her opinions on it. It would be interesting to know about the relationship between practitioners in the village, traditional practices and what support the Royal Project might offer to them as "*a learning resource center*" (Charasrum, 2010).

It is possible, that this Royal Project is ignored and even spurned by some in the village. This spurning has happened in other cases of state mediated control of natural resources. Reasons for some villagers avoiding interactions with these state sponsored organizations can be clan dynamics, inter-ethnic rivalry, gender politics and generational differences. These contribute to existing conflicts of values and perceptions between local forest users and the state view of ethnic peasant farmers at play here (Tomforde, 2003). Aspects of the "*Thai environmentalist discourse*" (Tomforde, 2003) can be looked at within conflict studies paradigms (Ide, 2016) to understand better how a project operates locally whereby the villagers are estranged from Royal Projects as has been reported by Hayami (1997); Yamauchi, (2005); and Latt, (2011).

Nearby Khun Wang is the village of Ban Nong Tao (also written Nong Thao) which I visited for research. Ban Nong Tao is a large, predominantly Karen village. There is an experimental program from Chiang Mai University (CMU) with the village school and there has been a long time collaboration with the Karen people in the village and CMU. I observed that the leaders of this village had a good relationship with academics, wider Central Thai society and other ethnic groups.

However, the village is facing the threats of globalization and modernization with mixed results. There is some success in meeting such challenges, but some issues remain to be overcome with many people there not being resilient enough to the dangers coming from mainstream culture (McKinnon, 2004). I have not found so much research material published from Ban Nong Tao in the literature as from Khun Wang.

There are features of the locations common to all the villages that are slightly misleading. All the villages are near or in National Parks. This gives the impression that there is especially important nature, a draw. However, while this is true for Doi Mot, the other locations may be designated as preserves mostly to control the areas for their watershed aspects, secondarily as a way of the nation state controlling via territorialization rather than the indigenous inhabitants and only a tertiary measure has nature protection been a consideration, even if it is the official justification (Vandergeest and Peluso, 1995). Ecotourism is a buzzword and tourist dollars are desired, so potentials are talked up without a realistic assessment of how much villagers will gain (Leepreecha, 2005).

The villages chosen all have in common a similar deciduous forest and similar ecological conditions. The highland rather than lowland nature of them means there were similar relations with neighboring areas and peoples who are mostly Tai, lowland peasant farmers. Thus, there are tensions and differences that can be generalized, but enough variations that they cannot be assumed as givens in any particular case. The developmental differences are disappearing as a part of the Thai process of development. It appeared to me that least developed along this path is Doi Mot, and most is Ban Nong Tao.

2 Forest peoples of Thailand

The Kingdom of Thailand is a modern nation state located in South East Asia and a member of Association of Southeast Asian Nations (ASEAN). It could be described as liminal or in transition, on the edge (Crosby, 2009). It is on the edge of China. Historically it was on the edge of being conquered by the French or Britishers in the days of clashing colonialism. Some claim this was achieved "*in practice*" (Kontio, 2014:48) by the Bowring Treaty of 1855 by the British Empire whereby, "*even though Siam was not directly a British colony, its status was practically that of a colonized state*" (Ibid.:48). More recently, it has been on the edge of permanent dictatorship as an aging, but respected monarch's reign was ending, with a lack of clarity over the country's future direction and form (Williams et al., 2012b). Currently a coup d'état is in force as a security measure, a new constitution has been approved by a referendum of resident Thai citizens which is to be implemented. The aged monarch, King Bhumibol, died in 2016, and Maha Vajiralongkorn is heir apparent, so it is an arbitrator dictatorship.

2.1.1 Minority discourse around Hill Tribes

Within this nation state there are many minorities, Williams et al., (2012a:723) claim "*there may be up to 20*" different hill tribes. These peoples come from a variety of different backgrounds. They have been gradually becoming more and more Thai. Although many have kept features of their languages, cultures and ways of existing separate, from the dominant Central Thai culture, they have until recent times been waning. This occurs via the process of Thaification (Streckfuss, 2012), which is only partially alleviated by pressures to see diverse traditions maintained for touristic purposes via cultural tourism and the community culture school of thought (Reynolds, 1998; McKercher and Du Cros, 2002; Leepreecha, 2005). This acculturation via Thaification aims to make everyone "Central Thai", so other languages, cultures and aspects have been downplayed or even forbidden and denigrated (Streckfuss, 2012). Such cultural assimilation includes an element of socialization, which takes away traditional ways of being and disadvantages the hill tribes, those who are not Central Thai, and more recently with urbanization, the rural dwellers.

Collectively the peoples of interest to this master thesis, in Thailand are known as Hill Tribes (Thai term: *chao khoa*), a catch-all phrase that does not differentiate between those who are forest peoples, more mercantile traders and farmers. Prior to the 1950s forest people (Thai term: *chao pa*) was the term used for the minorities who were not Thai. For Central Thais, forest (Thai term: *pa*) suggests *wild*, which is commonly understood as opposed to *civilized* (Network of Indigenous Peoples in Thailand, 2010:3). Choa khoa labelling was implemented in concert with a nation forming process of Thaification (Islam, 2003). In concert with this identity formation, the hill tribers were othered as not Thai (non-Thais) associated with negative stereotyping as crypto-communists, opium growers and forest destroyers, which were subsumed under the label choa khoa (Network of Indigenous Peoples in Thailand, 2010). In the 1950s, Hill Tribes began to replace the Forest People as the official term. Indigenous peoples and their advocates when translating "*indigenous peoples*" favor (Thai term: *chon phao phuen mueang,* in Thai: ชนเผ่าพื้นเมือง) (Network of Indigenous Peoples in Thailand, 2010:3). The Thai government does not accept the term "indigenous peoples", arguing their rejection on the concept that as Thai citizens they are Thais just as much as any other Thais and thus continues to use the term chao khoa (Ibid.:3).

In our case, the concept of peasantization is pertinent. So indigenous people, like the Karen, are not peasants (Gillogly, 2004). They are forest dwellers and have a different way of looking at

society. The terms: forager, forest people, indigenous, hunter-gatherer, peasant and tribal have all been used in the literature with overlapping and conflated or confused semantic fields. Such a lack of consensus of clarity is found not only between different scientists and their theories, but also by those of different political persuasions[5]. Nevertheless, from a Thai society (Central Thai) perspective, the hill tribes are less educated and less respected than rural small-holder farmers are, and less so than large agribusinesses and the large-business people. In turn, peasant may be insultingly called a water buffalo *khwai* (ควาย), which might be equated with the English word yokel, and then looked down upon, by more educated, mostly urban and young adult people. In addition to this class system, there are the Thai nobility and the military institutions that provide other ways of gaining status in Thai society.

2.1.2 Rural prejudice

Scientists who write in English across the world have tended to come from a perspective that sees a progression, as advocated by Weber who wrote in German, of urban centres as corresponding to urbane, which means civilized (Weber, 1923; Weber, 1978; Ahmed, 2004). And rural areas are thus by corollary a Hinterland, which corresponds to backward, rustic and barbarian or of a lower order (Christaller, 1933). This created a perception of urban superiority and a development towards and of the urban as qualitatively better than the rural. Rather than seeing the rural areas as a supportive network or villages, as existing in autarky or a number of small self-supporting linked communities, they are seen as linked in and dependent upon the larger urban areas.

This biased, prejudiced view is pervasive in the literature and approaches that many then take to the rural areas and those that live in them. So commonly, we read of urban or town planning and not rural or village planning (Dower, 2013). Plans are developed and made using techniques from an urban, centralizing, hierarchical; and not a rural, distributive, network point of view. In the Thai context, those with a pro-urban and anti-rural bias conflate these prejudices with the view that Bangkok is superior to more provincial urban centers; then those centers in turn are consequently seen as superior to areas that are even more peripheral. There is an element of Eurocentrism here, with the influential Weber's "*market center*" and Christaller's "*Central Place Theory*" based on what they saw in Central Europe, forming the dominant paradigm (Christaller, 1933; Weber, 1978). This paradigm has been applied by others, without taking into account the more heterogeneous city development that may be found in the Asian context (Ahmed, 2004).

Thus framed, writers, agronomists and international development workers are predisposed to regard Thai Hill Tribes as peasants or peasant farmers or farmers undergoing the process of development. This predisposition is augmented by the purposes of the Thai state (Gillogly, 2004), and together with a deliberate policy agenda setting they create a Thai development

[5] My view is that a *forager* is now placed within a foraging spectrum. The foraging spectrum has axes of cultivation to collecting wild forest produce, and hunting to animal husbandry or non-hunting that may mean vegetarianism. Thus foragers, scavenge and often do not hunt animals. *Hunter-gatherer* is a term that is being replaced by forager as the hunting element is generally questioned compared with scavenging in humans. Cultural evolution and human ecology approaches are making the term forager more desirable when compared to other animals. *Forest people* as a term includes all who are forest dependent or culturally forest thinking. A minority of forest people are indigenous people who live and dwell only from forests. *Indigenous* as a term is highly contested and may for some include ethnic groups who have migrated in recent history to an area and for others not. *Peasant* requires a settled agrarian existence, but is sometimes (imprecisely in my view) used to mean land resource based existence. *Tribal* requires a clear differentiation of a cultural minority from a majority culture; it is not a subculture, though some try to use it in that way.

discourse wherein there is little space given for any alternative consideration. Furthermore, there are two paradigms in how that operates. One is the "*extension of state power and hegemony* [the city] *into the village and the locking of third world peasantries into exploitative relations of production as a result of their integration into the wider spatial political economy*" (Hirsch, 1989:35). The city and state go into the village, dilute and replace it. The other has the village empowered to participate in the state without losing its identity by "*increasing spatial integration of national polity and economy* [which] *results in a rationalization of backward institutions and a participation of the peasantry in the wider society*" (Ibid.:35).

From the dominant former paradigm, the view is the village is "*transmuted*" (Ibid.:54) and periurbanized, thereby converting the population to a peasant village in structure and treatment. When the only category offered, is a poor peasant farmer, then the relatively few hill tribers are lumped under that category. Such an approach makes sense for the Central Thai Culture with more demonstrable, operational successes from such a usage (Walker, 2012). Yet for the Hill Tribes it does not, as the internal momentum of their culture is not one of integration and assimilation into an urban existence via a peasant stage (though to a significant extent they have been so forced into it). Instead, their cultural momentum is one of isolation or being "*retiring in their habits*", as practiced by many Lahu subgroups (Young, 2013:xxiv) and self-organization for self-sustainability, as seen with the Hmong (Tapp, 2010).

This stereotypes hill tribers, as peasants who are in an underdeveloped pre-peasant stage. Foragers (Johnson and Earle, 2000; Morris et al., 2015) are not peasants, but Hill Tribe foragers are thus seen as; pre-peasants that will become peasants. They are considered to be so or at an early peasant stage, with a settled existence with some use of agriculture and some considerable use of foraged wild forest products, but losing their traditional nomadic-foraging way of life and or gaining a peasant less nomadic way of life. Considerations in relation to, the fully developed stage of successful urbanization, have led to the misnomer of small-scale agriculture and agroforestry as subsistence farming, which is seen as some kind of failure of land economics to make big money or gain fabulous wealth (Scott, 1977; Walker, 2012). Rather than what such forms of cultivation are, which is a successful strategy to exist with minimal resource usage in time, labor and effort. The direction of policy and assistance given by International Non-Governmental Organisations and government agencies like the Royal Forest Department (RFD) has thus been predicated on this land-failure view and led to the idea of more money and better markets as the answer to the perceived poverty of these populations. While the forest is disappearing, due to lowlanders' over-exploitation, the forest peoples are being disappeared by the lowlanders' policy agendas.

2.1.3 Othering and social distancing of highlanders

While the broader cultural framing and institutional framework is so shaped, the corollary of this is that a self-fulfilling prophecy is created in which, the Hill Tribes and poor farmers and peasants are cajoled and facilitated to move away from the sustainable use of millennia and toward a capitalistic market economy. Charitably viewed as accommodating "*Thai romantic notions of the purity and stability of peasant life*" (Gillogly, 2004:138), but more accurately seen as sacrifice (Thai term: *sia sala*) as their "*duty and responsibility to the nation*" (Ibid.:138). This is further facilitated by centralizing tendencies of the state, and organized religion such as some forms of Christianity and Theravada Buddhism, that work well in concert due their shared view on how to approach affairs.

Particularly apposite in this encouragement has been the application of the New Theory on Land and Water Management (Watthana, 2002), developed by King Bhumibol to aid in rural

development of small farmers (Royal Thai Embassy, 2009), with a model farm concept embedded in its application (DLD, 2003; Mongsawad, 2010). This prescriptive design works well for lowland flat topography farms, but is less appropriate for the sort of land situation where "Sloping Agriculture Land-use Technologies" (SALT) might be more suitable in an agroforestry context (Vityakon, 1999). New Theory has been taken by many to be implemented as a one size fits all approach, despite its fuzzy logic that would allow some leeway in implementation. Agroforestry, which is taught in vocational colleges in Thailand, is thus commonly so subsumed under the term "*agriculture under the New Theory*" (Vityakon, 1999:109) (cf. 2.6.3).

This framing of indigenous natural resource management practices in educational praxis educates the broader community that indigenous methods are inefficient and inferior. When the focus on agroforestry emphasizes the agriculture over the forestry, which Vityakon, (1999) claims is happening, the indigenous who learn from a forestry rather than an agricultural direction first become marginalized as do their perspectives in learning. Apposite learning for them will have to come from their own communities and not the broader Thai institutional system. However, the Royal Forestry Department has 12 *Centres for Research and Development in Community Forestry* that does carry out training in "*agroforestry and indigenous knowledge* [with] *lectures and field trips to observe indigenous agroforestry practices*" (Ibid.:106). These have included over a thousand people some of which are active in community forestry practices (Ibid.)

Here a split is evident between indigenous and non-indigenous. The indigenous are being lumped together and for ease of analysis assumed to share commonalities. Such generalization may lead to the problem of "Othering" (Mountz, 2009), for example from a member of Zulu society their cultural perspective could be that all Europeans are "English Christians" - well they are white, they must be Christian like the others we encountered, and they speak English with us which confirms this. Development workers from Scandinavia experienced this very assumption (Spanuth 2008, pers. comm., #26). Yet, is there not a greater cultural distance between Cypriots and Finns, than between Hungarians and Serbians?

It is hard to measure such a difference, between cultures and the assumption is that if they are geographically close they are likely to be similar. In the same way, the Thai Hill Tribes can be treated as similar in distance from the dominant Central Thai culture in some features, but this would be to err, to see them as the same in all features. For example; some Hill Tribes are strongly patrilocal, as Central Thai culture is; and others are egalitarian or even matrilocal. These differences influence learning aspects and ways of life. In respect to natural resource management and learning, the Lahu are more individualistic than the Hmong who are more collectivist and learning must be differently focused. The orientation and use of resources may vary too, with Hmong having in the 20th century taken a more destructive approach to shifting cultivation than the Karen or Hmong that have engaged in a more structured approach in their cycles of shifting cultivation.

Another fallacy found is that of wrongly placing the culture within time. This can be called the de-evolutionary fallacy. Jellyfish are primitive; and primeval- crocodiles are not evolved? All animals alive today are equally evolved and so the same applies to the cultures. They have just walked down different paths. Likewise, technological advancement does not only have to be electric or built things it can be spiritual or cerebral. This fallacy is most noticeable when people ask how many words a language has. Often a language will lack the register for a particular area. For example, English supposedly lacked the register for musical terms and so borrowed them from Italian. Diminuendo, crescendo and soprano are examples of this borrowing. While

English lacked these specific terms, and the particular cultural milieu they came from, it would not be believable if it were claimed English lacked a well-developed musical tradition, which contained those elements. In reality, what we know of mediaeval music suggests there were instruments no longer used today; plain chant was very evolved; and there was tonal usage in Anglo-Saxon or Ancient English poetry, all of which suggest the aforementioned elements were present. Care must be taken to avoid absence of evidence in one domain as comprehensive evidence of absence.

2.1.4 The joy of forestry

What has all this got to do with learning? Why should we care about these quaint anthropological details? Learning is done in context. Learning can be categorized into informal, formal and non-formal learning.

Formal learning can be defined as "*learning that occurs in an organised and structured environment (such as in an education or training institution or on the job) and is explicitly designated as learning (in terms of objectives, time or resources). formal learning is intentional from the learner's point of view. it typically leads to certification.*" (European Centre for the Development of Vocational Training, 2014:99-100).

Informal learning can be defined as "*Learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective.* [And] *informal learning is also referred to as experiential or incidental/random learning*"(sic) (European Centre for the Development of Vocational Training, 2014:111-114).

Non-formal learning can be defined as "*learning embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning non-formal learning time or learning support). non-formal learning is intentional from the learner's point of view*." (European Centre for the Development of Vocational Training, 2014:183-185)

All of these forms of learning can be of equal merit, standing and can be validated (Bjornavold et al., 2015). The different forms may intersect and occur at the same time, as exemplified within the process of socialization (Greenstein, 1968; Morawski and St Martin, 2011) occurring during formal learning, whereat informal learning about how to conduct that learning is learnt by individuals.

Learning is done with a purpose, apart from the immediate instrumental one, which can be added psychological health, environmental protection, a repository of cultural and adaptive knowledge and fun. Fun is an important metric in human life and in Thai society it is recognized with the concept of fun (Thai term: *sá núk*, in Thai: สนุก) (Williams et al., 2012a:726), which is collective enjoyment that is expected as a part of life and in working situations too, and the expression that Thailand is The Land of Smiles (Gardiner, 1972). N.B. there are different kinds of smiles not all mean happy, as in Japan some mean awkwardness and are more embarrassment related. As with many Japanese or Egyptian people, Thais hold the cultural expectation that Europeans use smiling only for happiness and that they must smile in return, which may mean both sides in an interaction can fail to see the fakery or read a smile appropriately in the smiles they encounter. Thus, these do relate to learning. As we investigate learning more, we discover that the non-formal and perhaps the informal learning, is more important than the formal learning in many cases. So, this is important for learning in general.

What about for natural resource management (NRM) specifically? And even more specifically in the domain of forestry. FAST-Ossiach (a forestry education facility in Ossiach, Austria) runs a chainsaw course that the University of Natural Resources and Life Sciences, Vienna (BOKU) students, amongst others, attend to gain a Chainsaw Certificate. While the certificate is not required, nor even accredited in most degree programs at Masters Level, PhD nor BSc in forestry nor related courses, many students do attend, even those with informal prior use of a chainsaw. When I attended, I had used a chainsaw, at least two others on that course had prior experience and one even had his own protective gear. However, FAST-Ossiach has held courses in fairy tales, foraging wild plants, law and professional tree climbing. Furthermore, events are run there when foresters may come from across Europe to see new machines, chat professionally and have fun. While some of this no doubt is done for commercial reasons, added benefits are for networking, soft power with the informal aspects spreading knowledge and learning about NRM techniques and tools. The motivation for attending these gatherings and short courses includes an element of professional development, but a large part of motivation is the fun aspect. Assessing how much is, fun and or professional development and or personal interest, would need another thesis. Such research might look usefully to investigate motivating factors, marketing, personal choice and firm level decision-making on attendance.

In our case, we want to look at the learning not in an Austrian, nor a European context, though ethnographic, artistic and scientific methodology could be applied to the ethnic Austrians or even different ethnic groups within Austria. The selection of cultures for this thesis was a mix of practicality - members were accessible, clearly definable - and realism - there is only so much time and money that can be spent finding and interacting with cultures. Essentially this was convenience sampling (Teddlie and Yu, 2007; Kothari, 2009). Acceptable research peoples had to be describable as *forest peoples*. In the following cases, this is so, although to what extent and whether this remains is open to debate. So now let's go, to the mountain forests of Northern Thailand, to meet the Lahu, Karen and Hmong.

2.2 Hmong

As with any group of people the definitions of who is in the group and who is out of the group is affected by political considerations as well as cultural and linguistic ones. The Hmong, as a minority group, suffer this issue via other's designations too. Even the supposedly academic distance that should exist breaks down in classifications. In the Human Relations Area Files, a database of different human cultures maintained by Yale University (Goodenough, 1994), Hmong are classified in some of its writing as American Hmong. Yet the same ethnic group, when written about living in China, is referred to as the Miao.

The Hmong today exist in a diaspora that spreads worldwide (Lee and Tapp, 2010). In the USA, they are commonly termed, in English as North American Hmong, although there has been some debate about using the term *Mong* or *Mong!* (in White Hmong: *Hmoob*). Most of these Hmong have come from Thailand or Laos, often via camps in Thailand due to the effects of the Vietnam War, which was one war in a period of instability and conflict in Indochina in the mid-20th century called the Indochina Wars that affected the Hmong. Many Hmong now in Thailand have come from China, Laos, Vietnam and Burma where source populations remain. Hmong have spread more widely in Indochina and some have now gone to Cambodia. I estimated numbers of Hmong in Thailand as of today are around 250 000 with a worldwide total of up to 7 million based on population increase and figures from the 2002 census and (Williams et al., 2012a).

Historically the Hmong may have been considered as Chinese or one of the Chinese ethnicities. Today the Republic of China itself does not recognize the Hmong as a group, but instead conflates them with some other small groups under the umbrella term Miao. Miao is one of the official minorities of China (Chinese: minzu, an official minority) (Schein, 1986). The Miao exist in a wider variety of ways of living; from mountainous shifting cultivation, to settled agriculture, and even as coastal fisher-folk. Due to Chinese propaganda and internalization of this (oppression?), many Hmong in China would self-refer as Miao (Lee and Tapp, 2010). Outside of Chinese State influence, most would reject the term Miao, and refer to themselves as Hmong see Lee and Tapp, (2010) for a discussion of the reasons why and the use of White, Blue, Green etc. as terms to identify sub-cultural groupings.

The Hmong maybe subdivided into a clan (in White Hmong: *xeem*), "*each of which traces itself to a common mythological ancestor*" (Weinstein-Shr, 1993:274). Numbers vary with some saying 12 main clans (Tapp, 1989; Vorreiter, 2009b) and others saying upward of 20-25 clans, which can change over time (Weinstein-Shr, 1993). Recognition of clans is based largely on clothing, customs in worship with some linguistic and behavioral differences rather than trade. Although some clans make some products that others do not. Outsiders of a clan are able to marry into a clan (Boyes and Piraban, 1989a). Clan members can marry out of a clan, and out of being considered Hmong.

There is some ostracism practiced by some Hmong communities that may place individuals functionally outside of communal acceptance, but legally this may not be possible in countries (like China) that register people as holding membership of an official minority. In Thailand, officially people are Thai citizens or not. Large numbers of hill tribers are allowed to stay in Thailand without Thai nationality. This is changing with a desire to regularize residency and turn long-time Thai residents into Thai citizens.

So what are the origins of the Hmong? As with any oral culture, it can be hard to determine where a people came from. Do you know where your cultural group originated? Often these origins are shrouded in myth and legend and with a marginal people maybe deliberately obfuscated and confused with other stories. It seems the Hmong originated in Tibet (Vorreiter, 2009b) and had a shifting agriculture mountain-based culture. The Hmong were clearly distinct, from other nearby peoples, and migrated southwards.

Via a series of unsuccessful military escapades, the Hmong were displaced by other peoples, which prompted the Hmong to move to more remote and marginal sites to keep their culture and existence. These waves of war and consequent migration led to some Hmong moving into the Mekong Delta and Northern Thailand around the 1700s (Vorreiter, 2009b). At present, the largest population increases in Thailand are a result of good living conditions and stability provided by the institutional arrangements of the Thai state and its policies of regularization and laissez-faire towards the Hmong themselves.

The Hmong who grew up in Thailand or who came from outside it are now seeing themselves as Thai Hmong and not Hmong nor as Thai by in large. Although they are not militant about their ethnicity, there is an element of holding onto it and identifying as Hmong. This identification sees an ambivalence and not identifying. For example, the Hmong flag created in Laos (Vang and Hein, 2015) has been abandoned, "*now we live in Thailand, we have the Thai flag*" (Kisälli Sr. 2014, pers. comm., #26). Language choice is another indicator, with Thai use in many fora, especially writing in Thai, in the Thai script and not Hmong, which could be written in the Thai script, but tends to be written in the Latin alphabet in Northern Thailand. The likelihood that Hmong will have a Thai and a Hmong name, and to non-Hmong will

introduce themselves with their Thai name, or when publishing in English or in official contexts use the Thai name highlights a lack of status or confidence around the Hmong identity.

The Hmong in Thailand live mostly in the North and in villages in the mountains. Here they were traditionally engaged in opium growing, which provided a lot of money for luxury goods. The focus on opium growing, and not the other aspects of Hmong existence, is a disproportionate one from an outsider perspective, which fails to acknowledge the significant engagement in shifting culture agriculture for sustenance, which most Hmong communities traditionally relied on. Some were traders and fishers. Since the turn of the millennium, both the opium growing and shifting cultivation would be an outmoded picture. More recently, their mobile culture has been arrested by the policy of the Thai state. The effects of education and globalization, on the young, means they are not staying in their mountain community villages as much as prior generations did and there is an icreasing amount of input derived agriculture, such as growing cabbages, tomatoes and flowers for the market economy.

In the 1990s, there was an aim to make the Hmong and other hill tribers leave the forested areas, where they were said to occupy illegally as squatters. This eviction process has been called "*The Great Thai Enclosure*" and led to the *Forest Reserve Agricultural Land Resettlement Project* (Thai term: *Khor Chor Kor* Program) (Rich, 2014:15). This RFD and Thai military project tried to remove those on gazetted forestland off it. It was a costly disaster with few effective positive results (Usher, 2009b). Subsequently, while only a few Hmong gained a legal right and title to their land, in many cases they gained a de facto right to it. Infrastructure; such as state schools, community centres and money for service provision, has facilitated the development of semi-permanent, and perhaps in time recognition as permanent settlements.

These villages and this villagization come with a price. No drug-based livelihoods, a requirement to become settled smallholder farmers and perhaps in some locations to lose the freedom they once had. Thus some areas are protected and being afforested with local communities actively taking part in the restoration. This social forestry is not quite community supported forestry, although in places that might be possible.

Many of the younger Hmong people have gained skills (skill is "*the ability to apply knowledge and use know-how to complete tasks and solve problems*" (European Centre for the Development of Vocational Training, 2014:227-228).and academic education to ostensibly university master level through the Thai formal education. Many of them do not go back to their villages with self-built wooden houses with earth floors, poor electricity and meagre water provision and minimal furniture. Instead, they become part of the renting class working in the cities. Some keep in touch with and financially support their family back in the villages. There is a drive in the broader Thai society to become a successful entrepreneur rather than a small-holder.

Within the villages, many are growing produce for market, but mostly they are selling to Thais or Thai Chinese who control the markets and businesses and not processing crops to higher value end-products. Non-timber forest products (NTFPs) are harvested mostly for personal consumption and within the family rather than for trading purposes. Although there is still some illegal logging and harvesting of other products from the forests, this is clandestine in many cases and information about it hard to come by. The more successful are diversifying into employing other ethnicities, for example Burmese refugees and black-economy workers to assist with their farming operations (Latt, 2011). Some move into other trades and lose the traditional connection with forests.

Writing ability in the Hmong community is usually connected with the Churches. Though there are educated Hmong who are animists and can write in English, Thai, and Hmong they are a rarity among older Hmong. Writing is complicated as there is a 1953 Latin alphabet-based version, a Thai script and Chinese characters, which can all be used to write Hmong. There is no dominant spoken variety. So dialectal variability, from what could be classed as separate languages to mere variations on a standard, makes writing hard and the tradition of writing in Hmong has largely been lost. In the distant past, there was a Hmong nobility and a Hmong writing system used by the higher classes. Ancient texts may exist in Pali script and old Hmong writing systems of centuries ago. Meddling, by various colonial powers and different ethnically dominant groups with their own linguistic agendas, complicates matters further.

The majority of writers of Hmong will be Christian, who mostly use the Latin alphabet, though they may engage in syncretism by blending Christian and Animist practices. Religion has split the Hmong community with many abandoning their traditional animist beliefs in favor of Christianity. There are few Buddhists. Christianity itself is also divided, with Catholic, various Protestant and newer forms claiming adherents, in the Hmong community. In Thailand, Hmong will typically take part in National festivities like the Thai New Year Festival (Thai term: *Songkran*) and Hmong New Year Celebrations (in White Hmong: *Hmoob Noj Peb Caug*).

Community leaders should be older folks, but in North America, this has been challenged due to the lower educational levels of older versus younger people. There are elements of this in Thailand too, but the shamans who can be men or women, but are predominantly men, and older folks still are respected and listened to, even if in theory the younger folks should obey, they are fairly free to follow their own wishes in terms of trade or lifestyle choices. Hmong traditional society is strongly patriarchal, which means amongst older generations women tend to be less educated than men and less involved in interactions outside the family (Peng, 2007). Women tended to be more involved with herbal related aspects or crop usage. The spirits should act as a guide for animist Hmong and the calling of God for Christian Hmong. An important distinction comes with this. Christians in Thailand may be sinners, but they are secretive about their behavior and tend less to alter it from a sub-optimal over time. Animists are more willing to accept a mistake was made and to try to change their behaviors as a result of this recognition (Malikhao, 2012). So Christianity, despite Exodus 20:12, which is a fundamental proscription of Christianity commanding, "*Honor your father and mother*…" tends to divorce the Hmong to some extent from their traditional community structures and constrictions, which animism and Buddhism do not.

Describing the Hmong as Christian or Animist or Buddhist is a reductionist way of looking at the interplay of beliefs and practices found in the Hmong communities. There must be necessarily differences between, clans, villages and individual households in their practices. The Hmong refer to these practices as customs (written in White Hmong: *kevcai* or *kev cai*). Kevcai means customs or perhaps culture, *kev* refers '*to 'the way' (both literally and metaphorically), while caiv refers to 'prohibitions'*" (Tapp, 1989:89). We could say this is a religion, but if we dissected the kevcai belief system into different practices, some we could say are religious acts and some are customs in the narrower English sense of habitually carried out practices the Hmong have and are not linked to a view of that practice as a part of religion. Some of these practices are unique to the Hmong and some have come from other belief systems such as: Daoism; Chinese cultural practices; magic of other cultures, such as spoken Thai magical formulae, beliefs around soul numbers or spirt behaviors (Tapp, 1989).

Some kevcai Hmong (Hmong customs) are propitiation of the spirits (in White Hmong: *ua dab*), which you can do for your own benefit. Often Hmong people will talk about ua dab as if

it is the only word for traditional religion and animism or spiritualism, but it is neither complete for those purposes nor includes some other customs, which fall within kevcai.

Another custom is shamanism(in White Hmong: *ua neeb*) (Tapp, 1989:64), which is subdivided into, *ua neeb muag dub* (Tapp, 1989:64), *ua neeb muag dawb* (Ibid.:64) and *ua txeeb* (Ibid.:65), the latter of which can be done for divination. Shamanism should be done for the benefit of others and involves the spirits (White Hmong term: Spirit world, in White Hmong: *neeb*). Funerary rites (in White Hmong: *kev mob kev tuag*) (Ibid.:81), magic (in White Hmong: *ua khawvkoob*) (Ibid.:66) and herb lore (in White Hmong: *ua dab tshuaj*) (Ibid.:92) (in White Hmong*: kws tshuaj* meaning expert herbalist) (Cha and Dunnigan, 2003:45) can be subsumed under kevcai.

Therefore, the Hmong who I met as Christians might find it acceptable to engage in the way of herb lore, but not the funerary rights[6], both of which would fall under the designation kevcai Hmong. Others would say that ua khawvkoob (magic) was not particularly Hmong in any case even if animists (Tapp, 1989). While shamanism could be seen as animist religion and spiritualism, some of the techniques could be argued as no more than psychiatry or caring for the sick in a counseling way. They are perfectly compatible with (if for illness) also including modern pharmaceutical medicine and then shamanism and herbalism in a treatment régime. This is much as some Catholic Christians in Austria will pray for God's will to be done, and take medicine from a pharmacy with some homeopathic treatment on the side.

There is an aspect here which relates to the liminal and interaction with outsiders. This liminal perspective extends to practices around herbs and plants being grown near or distant from settlements. See Tapp, (1989) for more on this. There is a particular cultural relationship to knowledge and learning, which has meant over time inconsistencies have crept into practice and are not merely tolerated, but expected. It is believed that knowledge will be forgotten and half remembered. While I was there in North Thailand, I saw elements of this from some people, where an immediacy of living in the present was prevalent. This meant that not everyone had a desire to hold onto the past or even remember it or transmit it to the next generation. It was gone, over, and forgetting it was not problematic. This was in stark contrast to some other cultures that have a strong desire to memorialize, and immortalize both individuals and culture in collective cultural memories in living culture and material culture (Assmann, 2011).

Not every Hmong person agrees with this. Some do want to preserve their culture and do value it, but the overwhelming impression I got was not one of wanting to preserve it, but wanting to survive and cope with the now and near future. This made a difficulty in trying to do research and see how practices have changed within living memory. Many people did not have long memories and could not say how things were done even 10 years ago, let alone 30 or 40 years ago. I was lucky to find two preservationist informants. One with an excellent memory, who tried in the past to share her *wisdom* with others (Emäntä Parantaja), and lamented that they did not seem to remember stuff she told them. One who was as an academic (Veli Tietäjä), he was

[6] I saw this in effect when en route from Khun Wang to Chiang Mai on a motorbike with several people from the 7th Day Adventist cell church. We stopped to see one family who were Christians. Their young child had drowned when not properly supervised in a nearby waterhole. We saw this waterhole and there were around it many bottles of what I would call quarter water. These plastic small colored drink bottles had been left by family members (kevcai Hmong as a religion practitioners) for the child's spirit. It was considered what the child spirit might like and so this was done for the spirit not the adult and was not a Christian thing. The Christians did not take part in this and while the bottles were not removed, they were not added to.

painfully aware of the ephemeral nature of life and tried to get Hmong perspectives into the scientific literature, for Hmong society as well as wider humanity. See Appx. VII for details.

Wisdom is defined in this thesis as *practical wisdom*, which is the knowing of how to live well. The possession of wisdom shows itself in good judgment, whereby a person brings their knowledge to bear on their actions (Kekes, 1983; Ryan, 2014). Thus, wisdom is understood in connection with knowledge, which is exercised through practical action, and good judgment to achieving a right-thinking purpose. *Theoretical wisdom* lacks the application requirement gained in praxis and so is only a potential and not a realization and thus can be questioned if it really is wisdom. The choice to not act is a practical implementation of wisdom, as judgement has been exercised, the crucial something missing in theoretical wisdom.

2.3 Ladhulsi (Lahu)

Ladhulsi are also known in English as the Lahu people. They are an ethnic group with a very long history and are "*one of the most culturally diverse of any ethnic minority group in the world*" (Waddington, 2002: para. 1). In modern times, the Ladhulsi may be found practicing their traditional polytheistic religion or having adopted local religions and influences from Christianity, Buddhism, Confucianism and even secular thought (Du, 2013a). The Lahu themselves do not have a clear term for their own religion and it has been called various unsatisfactory terms, *Lahu nyi religion* is the best I have come across (Nishimoto, 2003), but in itself is problematic as it means Red Lahu Religion.

It has been argued that the Lahu Sheleh have variant forms of religion, culture, and language which are different from the Lahu Nyi forms (Spielmann, 1969). Even so, in this thesis I use *Lahu nyi religion* even though the group I interacted with were Lahu Sheleh, and Lahu nyi are considered to be distinct sub-groups of Lahu people (Spielmann, 1969; Bradley, 1979). It would be preferable to adopt some term, such as is found with the Hmong, like, *Lahu cultural practices* or *Lahu indigenous belief system,* which does not face the difficulty in saying if the practices are a religion, cultural mores or merely cultural folkways. There is considerable diversity between groups (Matisoff, 1988b), with some having shamans and some not (Spielmann, 1969) for example. Thus, *Lahu indigenous belief systems* would make more sense. This term is compatible with organized religions and is generalizable to all Lahu groups. It is useful for discussing practices in a way that does not alienate anyone.

Lahu may live semi-nomadic lives or modern sedentary lives (Waddington, 2002). The uniting feature of Ladhulsi are few, but related to linguistic features. Names, which are related to their cosmology of the world; the Ladhulsi language; and that they are traditionally matrilocal as regards where they live upon marriage, but equilocal in how they live and ascribe descent (Du, 2013a). However, even these features are not givens for individual Ladhulsi. Many Ladhulsi obey the pattern of the third generation in respect to language shift (Fishman, 1991; Hinton, 2001) and adopt the language of their host country, perhaps speaking English in California, a Mandarin dialect in China or Central Thai in Thailand and losing their Lahu language, but not identity. There are non-Ladhulsi people who use Lahu as a lingua franca, without being Lahu themselves (Waddington, 2002). And lastly although the "*Lahu kinship is fundamentally bilateral,* […] *there are varying degrees of matrilineal or patrilineal skewing in different regions* [, classes] *or subgroups*" (Du, 2013c:11).

Nevertheless, Lahu culture endures despite outside pressures such as the Chinese government's requirement that people take a family name. As Lahu do not have a patrilineal nor a matrilineal system this is an alien concept, but commonly Lee and Zhang are now found because of the

People's Republic of China's policy. Lahu names commonly are just a marker of when someone was born and this gives a simple list of names on date, week (a 12-day week), zodiac (or month name), and then some variations on time of day (dawn, day, midnight) and eldest or youngest, which are mostly given due to a desire to rename away from illness. Family names, which do not persist between generations, are matronyms (e.g. Gudrunsdóttir) and patronyms (e.g. Svainson) such as found in Norse culture. The same person could have different last names; Blær Bjarkardóttir Rúnarsdóttir has both a patronymic and a matronymic element in her name. For Lahu, family names are a combined name of both parents. So if a "*Zasi marries a Naduo, their family will simply be called Zasiduo or Naduo-si*" (Anghelescu, 2015:"Unofficial "family" names" para. 1). "*Lahu traditions also discourage interethnic marriages, which remain very rare in most Lahu villages*" in China (Lei and Liu, 1999 in Du, 2013a:190). However, in the Golden Triangle where several ethnic groups which can speak Lahu (Black Lahu being used as a lingua franca in some areas (Bradley, 1996)) who live in mixed villages, this is not the case and there is marrying into Lahu society by the Lisu, Akha and Wa (Bradley, 1996). However, as Ladhulsi believe in a dyad being the natural order of things, there is great desire and pressure to marry early. Early marriage tends to keep outsiders from marrying in or Ladhulsi marrying out (Du, 2013a).

In common, with many populations in the Mekong Delta, many Lahu have dispersed due to the Indochina wars and the effects of globalization. Calculating exact numbers is made harder as there are speakers of Lahu who are not Ladhulsi and vice-versa. I estimate in Thailand 124 000 and (based on (Jakathae, 2015a) a population of 1.6 million, with some small numbers in Taiwan, Vietnam, California, USA and other parts of the world diaspora included in that figure (Walker, 2015).

There are many subgroups of Lahu, but they do not have import as tribes, clans nor larger groupings beyond the family structure, as would be found with other ethnic groups. Instead Ladhulsi society is focused around kin networks (Du, 2013a). Kin networks may be a nuclear family, akin to the Finnish situation (Finnish term: Parents with their children, in Finnish: *lasten perhe*), or form an extended family that may include a whole village. Commonly designations can be traced back to a break from another kin over religion, war, resource use or other matters (Matisoff, 1988b). Historically a nobility existed; and a village religious leader (in Lahu: *paw khu*) (Schliesinger, 2015:168), who may have been influential in group identity formation (Matisoff, 1988b). Leadership structures were traditionally based on a couple as head of a village, but in modern times, there may be a headman or headwoman. There is variability between; political leadership being a man's rôle, and women controlling the household expenses, where influence from outside societies have arisen; and the more traditional way where there is no gender differentiation (Du, 2013a; Jakathae, 2015b).

Failing to carry out the duties of working for the family equally with a partner may lead to divorce, banishment from a village in extreme cases, but usually is resolved by recourse to law or the head of the house or elders in the village (Du, 2013a; Jakathae, 2015b). Romantic love is idealized, and along with it love-suicide-pacts. In the past there was a high number of deaths ascribed to suicides (Du, 2013c), perhaps due to social pressure to marry or not marry someone suitable. In modern times, the social pressure has eased, and young people marry slightly later, with a more permissive society developing.

As with any non-literate society of great age, there is much speculation over the source of the Ladhulsi and other factors to do with their history. Genetic and archaeological research may be able to give indications, but caution should be exercised as "*the approximate Bayesian computation procedure employed to evaluate potential factors for driving genetic diversity*

revealed that language is the predominant factor affecting genetic variations, whereas geography is not" (Srithawong et al., 2015:371). There are agendas and biases different groups may have in promoting their own view of Lahu history too. For example, it is often claimed that the first Lahu Christians came to Thailand from Burma after the 1930s. Yet evidence shows that the Lahu were already established in Thailand villages in the 19th century, and the first recorded missionary contact was in 1888, with a baptism in 1891 (Walker, 2010). This wrong belief arises because one Christian group uses its own history and not another's.

Similarly, there are Chinese agendas, used in the process of national myth making (Jianxiong, 2009). And Thai too (Streckfuss, 2012). The Lahu themselves may engage in this with the prestige name of "*Lahu Na Shehleh*" being used by the Lahu Sheleh. In this case Na Lahu are Black Lahu, a different group, who wear black and are accorded a high status by wider Central Thai society and others, many are Christian. The Sheleh Lahu wear black, but most are not Christian and they are not Na Lahu, but with an uncertain etymology may have adopted the Na, based on the status aspect; or possibly the older name claimed for them of Na Muey or the "*descendent group* […] *Na Mue*" (Spielmann, 1969:327).

Genetics suggests that the Ladhulsi come from the South of China and not the North. The idea that they came from Tibet and the Quinghai Lake area is wrong. This "*historical knowledge of the Lahu has been constructed by the state administrative power and local intellectuals* […] *it has become a cultural resource reinterpreted by villagers in their daily life*, [and is a myth] *taken to be local knowledge by anthropologists and researchers worldwide*" (Jianxiong, 2009:113). As a result, calculating the age of the Lahu as a defined people is not possible with current scholarship, though an age of 4 500 years has been claimed (Jakathae, 2015a).

Within contemporary Lahu society, there are aspects of a belief in a past golden age that has been lost. This Shangri-La had kings and the Ladhulsi had their own country. The real inspiration for Shangri-La, in Hilton's book *Lost Horizon* (Hilton, 2015), is believed to be from Yunnan, and could be an actual reference to this Lahu past. When we hear this, we are prone to make the error of presentism. In a 4 500-year history without written records it is not easy to see if there were nobles a long time ago, nor their form (Kataoka, 2013). The area where the Lahu are and were has been described as "*Zomia*", which is a kind of anarchic area, where the concept of the nation state, as developed from the Peace of Westphalia, is absent (Scott, 2014). Rather than countries in Zomia, we tend to find pueblos. A pueblo is a group of people who have in common an identity, but can be dispersed amongst other people(s) geographically. Kings within a pueblo incline toward spiritual leadership, and have less of the attributes of land control. Aspects of which can be seen with Irish Kingship (Simms, 1987) or the Dalai Lama, a spiritual leader "*who chooses to reincarnate for the purpose of serving humankind*" (Zajonc and Houshmand, 2004:xi).

In this vein in the 18th century, there was a noble class and kings within Ladhulsi society in Yunnan. These were properly a collection of religious leaders within Mahāyāna Buddhism. Mahāyāna Buddhism is akin to agonist thought, that is to say it is based upon a collection of sutras, which are teaching writings, which may well be contradictory when one is compared with another, but collectively read allow a hermeneutic circle that disintegrates the delimiting linguistic constructs we use to think with. Its origins are anarchic, that is to say marginal thought against the monarchical centralized control over belief and praxis. It "*probably originated among antisocial forest hermits with the idea of returning to the ascetic spirit of the Buddha himself*" (Williams, 2008:38). Mahāyāna includes the idea that anyone can become a Buddha, lay or monk/nun and anyone can take a leading rôle. All can, and should be saved. This more

anarchic approach, emerging in a forest dwelling context, was closer to the Lahu philosophy of the 18th century. It additionally allows a syncretism with Lahu indigenous belief systems.

As well as the loss of Kings, the Lahu have it appears lost writing. Lahu mythology ascribes this to writing being given by a creator God on rice cakes to the Lahu, which they then ate, thus internalizing and not needing a writing system (Kataoka, 2013). However, the Lahu were surrounded by other peoples who did have writing systems, and it may be that what writing was needed was merely recorded in Chinese characters or scripts. There is evidence of lost books (Kataoka, 2013), with one such book being described as "*a Chinese book on Astrology and evil spirit worship*" by William Young in his missionary correspondence (Kataoka, 2013:90). And sticks with marks on them used for accounting and possibly some writing purposes (Duffy, 2007). Both lost-book legends and communication sticks are common to several groups in the region.

Deeper analysis reveals that Lahu tend to use poetry and song to memorize things, and so writing is not needed in the sense of a script. Likewise, in old English great poems were learnt by many people that shared and stored wisdom. However, a tally-stick for accounting or the need to send a message can be accomplished by sticks with chicken feathers tied around them, scoring the sticks, perhaps with simple pictographs or tying grass. Evidence of similar mnemotechnics can be found in the Baltic, for example Finnish runes, which are carved runic letters, and not the poetry called runes, Livonian ownership marks on material culture and corn dollies (Lambeth, 1974). Such methods are very old, and not specifically Lahu. Great wisdom and information can be stored in such simple systems as the khipu knotted strings of the Incas indicates (Urton, 2009). Information can be stored in the weaving of cloth and patterns so used. This is found with Latvian culture (Tumėnas, 2014) and possibly by the Hmong (Duffy, 2007; Vang, 2016).

Lahu culture is welcoming toward outsiders and integrates well with other groups. As a result, the opportunities for outsiders to infiltrate and exploit this are great. While outsiders may bring wealth to Lahu communities, they alter the way of living. Sometimes, they monopolize and control resources in a capitalist way. When in Thailand I saw these aspects in Doi Mot. Some non-Lahu in Doi Mot have taken control of resources, that can be criticized as removing them from community control, thus enclosing the commons. For example, the development of a sauna culture, which uses a lot of wood resources.

Many foreigners come as tourism has been promoted; the possibility to see the real indigenous people is romanticized, for learning massage, yoga or meditation. These have a danger of changing the dynamic from a welcoming one to a parasitic one, where tourists are seen as cash cows and not friends from far away. In my experience, the latter perspective is what I encountered in the main. However, there are Lahu entrepreneurs who use the knowledge gained from such contacts to develop their own businesses and ideas in a wider framework (cf. 4.1.2).

The villages I visited were strongly animist, though others may be Christian. The presence of foreigners in the locale that were in favor of traditional ways of living and supported the culture, meant that the villagers could see a value in their culture from an outside perspective, despite their strong resilience to interference and change this is valuable under the ever-greater pressures from globalization. Yet economics and practicalities meant most would move to easier, more modern ways if given the choice. An example of this was roofing material. I went to a new house, which is shown in Figure 4-20, with a thatched roof, where I helped to construct hygiene facilities via an earth building technique. The owners told me they chose the traditional straw thatch, but villagers now would avoid this, often not having the land for the straw, the

skill being lost how to build it and preferring the cheaper and more durable option of a corrugated iron, steel or plastic roof (Casidy 2014, pers. comm., #1).

Lahu society is very egalitarian. It is based on the concept of the dyad. *Xeul Sha* is the creator dyad. This is a God and Goddess that is both male and female together. This is more like the concept of the holy trinity being a triad together in Christianity (Schaberg, 1980) and is not like the Ying-yang of duality found in China. From Xeul Sha came the practice of pairing everything, a male and female pair. This extends to: two temples being built for worshiping Buddha where Buddhism is present; ceremonies having a female and a male part; equal sharing of all work where possible between men and women with very few exceptions and the desire throughout the culture to pair up (Du, 2013a). This has big implications for the day-to-day praxis of everything and means the question of women's or men's rights are largely alien as already a given. This is the accepted wisdom, but is questioned by a case where a Lahu woman claimed "*Lahu women have no influence over their husbands, the men have to be dominant, the men have to be the boss*" (Boyes and Piraban, 1989b:100). There are power dynamics between ages, and these are based on having children, with the oldest losing power and the youngest not being so powerful nor respected in their opinions. Age is not the decider here, but the status re children and grandchildren. Power only comes if in a pair. The view that "*Things are manageable only when a pair of female-male masters rule together*" is the standard one (Du, 2013b:46).

2.4 Pgak'nyau (Karen)

A number of groups, with a close relationship, geographically and culturally to the Karen of nearby Burma, make up the Karen in Thailand. The Karen I met were very clear that the name for their particular group was Pgak'nyau. Many Karen emigrated from Burma as refugees, and live in semi-open camps on the Thai side of the border.

Terminology for the Karen is confused and conflated. A lack of agreement over which features should be used to define the Karen and subgroups means it is not clear in many studies just who is written about. Yet Karen can be grouped together based on a common linguistic ancestor, even if culturally and politically on account of cultural assimilation, syncretism and influence from other groups there is a greater variety. The British colonialism and Christian missionary work have been influential in creating an identity or at least a label of Karen out of these diverse groups (Thawnghmung, 2012).

Ascribing individual Karen to a particular group is challenging and language use is not wholly reliable. Members of a family may not even share the same primary language nor linguistic repertoire (Moonieinda, 2011).

Due to the diversity of identity, many are not named Karen, but included within other groups or even simply named as Burmese or Thai in official records such as a census. In the case of the US Census some groups are given the chance to record their ethnicity such as Scottish, English, Hmong to a greater degree than others such as Chinese, German or not at all such as the Karen (USCB, 2012). This denial of recognition has been used by many states for many ethnic and ethnoreligious groups. Some Karen, who do not speak any Karen language, self-identify as Burmese on account of their religious affiliation. That is they are Buddhist and not Christian or to live "*quiet lives*" (Thawnghmung, 2012:142). Thus, these ""*other" or "quiet" Karen*" (Ibid.:2) make estimating numbers hard.

The majority of Karen live in Burma and Northern Thailand. Refugees from the wars in Burma have meant many have been resettled outside of Asia. The largest numbers of those outside Asia are in the USA, Canada, Sweden and Australia. However, UNHCR resettlement policies have contributed to a true diaspora, arising via refugee quotas causing many to be accepted for resettlement, in many other countries. Estimated numbers of Karen in Thailand are 420 000 (Williams et al., 2012a), with a further 100 000 in the refugee camps (The Border Consortium, 2016) and if including the diaspora about 9 million worldwide (AKF, 2014).

Historically the Karen and the Burmese have mixed so that many who would identify as Burmese could be said to be Karen in the same way that Thais are mostly a mixed group of Chinese and Tai peoples. This causes "*politically motivated*" figures ascribed to the Karen of tens of millions, and Burmese Military figures of only a couple of million (Moonieinda, 2011:6). As no official census has been carried out in Burma since 1931 (Thawnghmung, 2012) only a guestimate is possible of actual numbers. The Red Karen (Karenni) are often thought of as distinct from all the other Karen groups, and figures are adjusted to exclude them from total counts on this basis.

Those most strongly self-identifying as Karen come from a mountainous shifting cultivation culture, with settled agricultural and urban dwellers less strongly so identifying. The latter are more likely to self-identify as Burmese. There is a desire to support pan-Karenism and creation of a nationalistic identity, which extends beyond Burma. This is reinforced by particularly the Karen National Union (KNA) and its military wing the Karen National Liberation Army (KNLA), who are dominated by a Seventh-day Adventist Christian belief, and have implemented *Kawthoolie Law* modelled on the Burmese Penal Code, which in turn is based on British colonial law (McConnachie, 2014). The KNA is probably acting as a bulwark against the influence of other Christian denominations. Within Burma itself, there are people who would self-identify as Karen and support the military, so the identity politics is not simple.

A similar axis exists with urban dwellers, more likely to be Buddhist; small-holder village dwelling peasants, Christian; and the most remote mountain groups, Animist, and thus holding closest to traditional Karen cultural ways. There are some Muslim Karen too. These are generalizations and should be treated as such (Moonieinda, 2011) (cf. 4.3.3).

The Karen can be divided into 10 subgroups from 4 main linguistic divisions (Vorreiter, 2009a). "*The Karen encompass a number of subgroups, the largest being Karen S'gaw (Pgake-nyaw) Karen Pwo (Plong), Thaungthu (Pa O), and Kayah (Karenni), which also represent the four major language divisions. These split further during their southerly migrations though Myanmar into roughly ten smaller groups*" (Vorreiter, 2009a:13).

Karen society is matrilineal and based on nuclear families living in matrilocal residences. "*Most tribal groups favor multigenerational family units. Not so the Karen, whose households comprise a nuclear family that values independence and self-sufficiency* [...] *As Karen society is traced through female bloodlines and practices matrilocal residence, unity and continuity come from ritual structures based on these matrilineal ties*" (Ibid.:14).

Karen traditionally have only one given name and make use of nicknames. "*Karen laypeople will often be known by a nickname rather than by their given name. This nickname may be the name of their village, or refer to a physical attribute. For example, Naw Baw means "Miss Fatty"*"" (Moonieinda, 2011:22). Thus, names are of limited use in ascribing which group an individual Karen may belong to. In Thailand, do Karen have a Thai and a Karen name and introduce themselves with their Thai name to non-Karen, for example upon publishing in

English or in official contexts? It seems in my experience that they introduce and use their Karen name. When forced to add a last name customs vary; either taking a grandfather's name, mother's name or only giving their one name as a last name and giving no given / first name. Social media and official documentation are a poor guide here. For example, the online social media platform Facebook requires that your "*First name*" and "*Last name*" are given to sign up for an account. As a Karen person, you are forced to lie and fill in the "Last Name" box on the online form or you cannot have an account. As a result, some put their given name twice or follow the conventions above. A similar process has been seen with the Sherpa people, where a last name was required on citizenship papers, some officials wrote in "Sherpa" as a last name for the illiterate (Parker, 1989). Thus, no kinship information can be reliably taken from these varied practices.

There is a "*fluid Karen group identity*" (Pollock Khin and Adem, 2012:"Orientation:identfication and location" para. 2) and "*economic and political interests*" (Ibid.: para. 2) are more crucial than other traits that may cluster around an identity which include: language, religion, and material culture (Pollock Khin and Adem, 2012). Scholars engaged in a comparative anthropological approach, may expect societal structures, which may just be absent or manifest differently thus making confusing ontologies and taxonomies. In my opinion, this lack of clarity may just reflect that anthropologists have not studied the Karen enough, so Karen societal organization is not clear to the scholars, but is clear to the Karen. Fractured categorizations reveal the desire to split and classify rather than amalgamate a people. A Karen perspective recognizes an overlapping diversity, "*In traditional Karen villages people are farmers, teachers, traditional healers, traders or Buddhist monks. Except for people who are only farmers, most people will combine these occupations. Many monks are teachers and healers as well, and most teachers or traders will be part-time farmers*" (Moonieinda, 2011:41).

Outsiders are able to marry Karen people. Karen can marry outgroup without losing their status of being Karen. Although there is a preference for marriage within the same religious denomination by Abrahamist Karen (Moonieinda, 2011). Becoming Karen theoretically is very easy, it requires self-identification as Karen and an ability to function as a Karen linguistically and culturally (Moonieinda, 2011). "*Karens who grow up in Burmese or Thai cities may not speak a Karen language, and culturally may be closer to Burmese or Thai people than to other Karens.*" (Moonieinda, 2011:5). Here Moonieinda, who is Karen, appears to contradict himself, but on reading the source, it can be seen that some people regard linguistic capability as the decider of being Karen and others do not, which reflects the diversity of opinion within the educated Karen community whereby individuals may aim at an exclusionary or inclusionary definition depending on their purpose. It reflects the scientific consensus that human races do not exist (Ellis-Petersen, 2016; Shrewsbury, 2016).

Ostracism was traditionally practiced by Karen in a limited form. That is "*to the extent of having to live outside of the village stockade*" for cohabiting couples, widows and orphans (Marshall, 1921:"Part III SocialLife: Chapter XIV – Social Conditions: The Women" para. 5). As Karen society was collective rather than individualistic, sanctions and punishments were applied to maintain this communal approach. The headman would be the one to instigate this, but via a meeting of the village that would take into account various old sayings and oral law transmitted by elders as well as the affected parties' views (Marshall, 1921). "*As both spiritual and political leader, the village headman might deal with behavioral problems through social sanctions and/or spirit propitiation. For example, there are strong sanctions against adultery, which is seen as an affront to the Lord of Land and Water; he must be assuaged by ritual sacrifice by the guilty parties, and possibly even their banishment, to avert a natural disaster striking the community*" (Pollock Khin and Adem, 2012:"Sociopolitical organization: Social control" para.

1). Moral laxity and a move away from the old religious ways, which were often justified on spurious, nebulous grounds of harm to crops or children means that the Karen traditional proscriptions were commonly not understood nor obeyed even if so known back in the 1920s (Marshall, 1921). This trend has continued to modern times.

These moral precepts form a jurisprudence and customary law around which NRM is a part. They include storage of plant extracts (poisons), reverence for limitations on production, dealing with famines and participative, team working and societal control. More detail can be found in (Mason, 1858, 1866, 1868 mentioned in Marshall, 1921).

The source of the Karen according to legends a mass out migration from the *"river of running sand"* with the allfather of the Karen people, Htaw Mae Paa, leading them from the Mongolian Gobi Desert (Marshall, 1921; Vorreiter, 2009a). Without written records, it can be inferred from; material culture and other info in songs, music and stories the Karen migrated via Tibet, Yunnan finally to Burma and Thailand (Vorreiter, 2009a; Pollock Khin and Adem, 2012). An 8th century A.D. inscriptions mention the Cakraw in central Burma, which has been claimed are the Sgaw Karen and there is an academic belief that some Karen came to Burma from the 4th century and an inscription places Pwo Karen in Burma in 1165 A.D. (Cooler, 1995). Karen have been living in where modern Burma is now located longer than the Tai or the Burmese and some other peoples. They have managed to keep their own identity despite the processes of peasantization, urbanization, Thaification and latterly globalization. Nevertheless, they have absorbed considerable cultural influences from contact with other cultures.

On arrival the Karen dwelled with a "*slash-and-burn agricultural economy*" mountain-based culture (Pollock Khin and Adem, 2012:"Orientation: History and cultural relations" para. 1). However, today they tend to be found in the hills, rather than the most remote mountaintops, and are increasingly peasantized. There are some populations, which remain as high mountain dwellers. The Karen had three chieftainships in Burma and in Thailand as Karen Lords ruled over a further three semi-feudal domains during the 19th century, with the last disappearing around 1910 (Pollock Khin and Adem, 2012). The main unit of geopolitical organization for Karen has been the village, with power over several villages being in the main transitory and unlikely to extend over generations (Marshall, 1921). The formulation of a council of elders and a headman, found to rule villages today, has been influenced and enjoined by neighboring patriarchal Buddhist and colonial Abrahamist cultures.

"*Christian missionary activity may have been the most important factor in the emergence of Karen nationalism, through the development of schools, a Karen literate tradition, and ultimately an educated Karen elite whose members rose in the ranks of the British colonial service*" (Pollock Khin and Adem, 2012: "Orientation: History and cultural relations" para. 3). Though there were Karen who had learnt literacy from Buddhist priests; traditional Karen songs and a legal code which together contain many stories prior to Christianity's influence (Marshall, 1921; Thawnghmung, 2012).

During the 19th century the symbols of nationality were strengthened with a common awareness of being Karen; not only institutionalized by special treatment by the British Empire colonial administration, particularly in terms of police and military recruitment (Thawnghmung, 2012), but also with a Karen flag and Karen's own literacy. While Karen may use varied languages in different for a, for example at home, in work, when studying, there is an awareness of what is Karen and what is not.

The Karen in Thailand live mostly in the North and West. Their villages tend to be either; mountain swidden agriculture practicing, or plains and valley wet rice cultivating (Thai Tribal Crafts, Undated), although they are found in a third physical environment, Sittang, and Salween deltas and along the coast of Tenasserim (Pollock Khin and Adem, 2012). Traditionally the Karen growing of crops was supplemented by foraging, home gardens and very little trade. To function in a market economy some cash crops are now grown. Tobacco and marijuana have been grown by the Karen, though opium growing was not as common as with other tribal groups. *Cannabis* was grown for elephant food and for cooking in stews not principally for its narcotic use (Moonieinda, 2011).

In more recent times, the large Karen population has moved to grow more flowers and cash crops for market. This is partly due to encouragement by the RFD and partly the effect of the Great Transformation (Polanyi, 1944). Shifting culture and dry rice cultivation has moved more toward static villages with defined curtilages and identified land rights. Along with this has been a change toward wet-rice, cash crops and thus cash-economy with profound implications for the socialization and way of living of many Karen. They are becoming Thaified and adopting the patriarchal ways of that society. Compulsory schooling is abetting in this socialization, although strong political awareness and political education of the young and participation is helping to adapt new ways to function that are sensitive to Karen traditions and culture to some extent.

Some Karen have held land-title for a long time. However, they still suffer discrimination from the Thai majority, or to be strictly more accurate the ruling mercantile classes that are corrupted by capitalism may engage in forms of corruption that deny the Karen their rights. For example, forcing them from the land or selling off their resources. This is nothing new as Brandis under the British was engaged in this in cahoots with the King of Thailand when teak trees were sold even though each tree should belong to a named Karen person, there was no replacement or consideration of this ownership nor relationship.

Karen who are animist have a relationship with forests and trees that is religious. This extends to protecting and caring for the forests in ways that others may not share. Within this tradition has always been a reforesting element. Thus, the Karen are able to question and educate other groups about protection forest, good species mix and silvicultural techniques that make a sustainable forestry for timber and NTFPs. Such acts may be carried out by families, matrilineal groups that cut across villages and by whole villages via the village councils and councils of elders. This is facilitated by the institutional environment and government agencies.

American Baptists have used Karen traditional cosmology to Christianize and suggested it refers to the Garden of Eden (Pollock Khin and Adem, 2012). Through this taking care of the forests has become a Christian thing to do. Thus, Christianity and Karen animist-and-Buddhist belief have mutually strengthened the credence of protecting the forests as a religious duty and not just a practical one.

Lower schools and later academic schooling takes many Karen away from where they would traditionally learn in the forest and close to their dwelling. Many of the younger people thus lack the skills, in common with many in Thailand, to function in a forest dwelling or even agricultural livelihood. Some young people have spurned university with its "*many traps*" (Jowalu 2014, pers. comm., #27), but the future is bleak for those without academic skills nor natural resource management aptitudes. Many of those in the refugee village camps have gained an education, which is unrecognized by Thai or Burmese authorities.

Houses are often self-constructed wooden houses with wooden floors. Some are now being built based on other architectural traditions (cf. 4.1) or with tin rooves rather than straw or wooden shingles. As houses are for a nuclear family and they are part of more permanent settlements the build quality is improved upon that of traditional housing. Some parts of a house may be reclaimed and used again rather than just abandoned upon moving to a new location.

Within the villages, many are growing produce for market, but mostly they are selling to Thais or Thai Chinese who control the markets and businesses, and not processing crops to higher value end-products. NTFPs are harvested mostly for personal consumption and within the family rather than for trading purposes. Although there is still some illegal logging and harvesting of other products from the forests, this is often clandestine and information about it hard to come by. More of a risk to the traditional Karen way of life is that, other ethnic groups introduce poor silvicultural techniques, due to not knowing how to manage the forests in the way the Karen would. Their ignorant exploitation of the forests thereby replaces the more ecologically sustainable management Karen would practice.

The more successful Karen, in common with all groups, are diversifying into employing other ethnicities e.g. Burmese refugees and black-sector workers to assist with their farming operations. Others become successful entrepreneurs in tourism (cf. 2.6.2), and many of "*the Karen who did not respond to tourism in the same way as other groups have taken their simple was of life in which they live harmoniously with nature and the environment as a tourism attraction, and this has evolved into ecotourism and community-based tourism. In this case, the tourists and middlemen pay more respect to nature and ethnic people's life and culture, because all are explained as congruently related to one another.* […] *Consequently, in theses kinds of tourist sites, tourism has strengthened highland ethnic villagers to revive their local knowledge and historical sites, preserve their community forest and redefine ecological meanings for ecotourism purposes*" (Leepreecha, 2005:13). Some move into other trades and loosen their connection with forests.

Many are affected by modern Thai ways of living that disrupt and expose their traditional cultural ways of coping with stresses to coping strategies such as alcoholism, gambling and drug abuse (Moonieinda, 2011; Thawnghmung, 2012). Alcohol was commonly consumed in a gendered circle from small cups. This allows limiting of the amount drunk, by the drinking etiquette, which requires sharing and passing around. If co-ordination of hand and cup wavers, then drinking ends. Nowadays alcohol is not drunk in this way. Instead, individuals have their own bottle or can, the controls are removed and a greater degree of drunkenness results (Jowalu 2014, pers. comm., #2). Drinking is affected in other ways by Thai government support for rice whiskey (Thai term: *lao khao*), and cultural acceptance of tinctures and various moonshines (Thai term: *lao theuan*) by the lowlander peasants (Cummings, 2000), both of which are corrupting via socialization the Lahu cultural balance.

2.5 Central Thai

Construction of an ethnos

The Central Thai people are a Tai people. Differentiating between Thai and Tai is quite difficult in many contexts. Dai is used by some authors to avoid this terminology confusion, but adds to it because of varied authors' own particular semantic fields around the term Dai. Thai is often used interchangeably with those that live in Thailand or in former times in Siam. The Central Thai are also an amalgamation of several Tai ethnic groups. Some of these are also confusingly called Chinese and not easily dis-aggregated to Cantonese Chinese, Hakka Chinese etcetera.

Although the Central Thai are predominately Tai peoples, and speak a Tai language, there is some syncretism.

Exploring, the history of settlement in the area that forms the Kingdom of Thailand will make clear the proper usage of the terms Thai or Tai, as they should be employed today. In the 10th century AD a Tai People lived where we nowadays have Taiwan. Some of them migrated into the mainland of Southern China. During the 13th century, some of these Tai lived in mountain forest areas and began to migrate into where modern Thailand and Laos are today. At this time, these were largely forested, and the people who came lived from a mixture of mountain rice paddies and lowland agriculture. They interbred and assimilated with the Mon, Malay and Khmer Austroasiatic populations already existing in those areas. This hypothesis is called, the *demic hypothesis,* and is better supported by archaeology, history and genetics than the *cultural diffusion hypothesis*.

The cultural diffusion hypothesis postulates that there was a diffusion of the culture from southern China so that the indigenous Austroasiatic people adopted the Tai-Kadai language and culture. "*This general question of demic vs. cultural diffusion is a long-standing one concerning expansions in other parts of the world, particularly those involving languages and/or agricultural practices*" (Kutanan et al., 2017:86).

During the 18th and 19th century, these Indochinese populations still received in migrants, who were coming from Southern China. Those coming from Southern China were Tai peoples, as well as other Chinese peoples such as the Hakka; part of the larger Han constructed /adopted ethnicity (Gladney, 1996; Lin et al., 2001; Li et al., 2015). Many of these Chinese arrivals came as single men who married Tai women. Later on after WWII, the Chinese that came tended to come more as families and so did not intermarry and mix traditions as much. There is thus a complicated positionality varied views from the diverse populations in Thailand about the different economic and ethnic mixes (Tong and Chan, 2001).

Though Thailand was referred to by other peoples as Siam (Smith, 1946) during these times of migration, it was referred to by the Tai peoples as Thailand. Siam can be seen as a geographical expression, akin to Italy before unification and nation forming. Upon unification and centralization the country can be better described as Thailand (Kontio, 2014). This process was called civilization (Thai term: *siwilai*) (Kontio, 2014:51), and was based on the idea of the British Empire as a model. N.B. Central Thai culture has worked in a dependent cooperative relationship with whoever has been the dominant power in a given period, so: China (Ming Dynasty and Qing Dynasty), The Second British Empire, The Empire of the Sun, The American Century and now more equally with ASEAN. Siwilai includes a "*cosmic power*" (Ibid.:51) aspect, with a slightly broader semantic field than the English term civilization (Ibid.:51). So uptill the 1930s there was no strong Thai identity, instead there were a variety of cultural identities; Lan Na (North Thailand), Isan (Northeastern Thailand), Central Tai and Southern Tai, which persist today.

The societies of earlier times were shaped by *sakdina systems*. Sakdina was the South East Asian equivalent of feudalism. Sakdina ascribed a land-based worth to most people, this was sharply codified from a variety of different sakdina variants across Siam and affects the Central Thai society to this day (Wilding, 2011). There was limited social mobility and an institutionalized hierarchy with sakdina, which affected status, abilities and worth of everyone in relation to everyone else. Some people had no worth in this system. Attempts to abolish it, from living cultural memory, have met with limited success. It underpins many attitudes and

beliefs of Central Thais today, even if officially it no longer carries legal weight, after its official abolition in 1932 (Wilding, 2011).

The different statuses can be explored looking at the terms gentry (Thai term: *ammart*) and serfs (Thai term: *phrai*). Ammart means high-ranking servant or retainer. Ammart is loosely equivalent to the term gentry in English usage in England, and thus is now used to mean the elite in a noble sense. Due to lexical shift, it is often limited to the 'bureaucratic polity', but may include leaders of academia, politics, business and the military. It contrasts with the peasantry and often encompasses the religious leadership within Theravada Buddhism.

The origins and exact meaning are not given clearly and consistently, but it seems likely it was related to the concept of the four occupations of China: the gentry – scholars; peasants; artisans; and merchants. The four occupations were those who were not of the aristocracy. Today in Thailand ammart is used to refer to the ruling classes in contrast to the phrai, the phrai being the ruled over. Historically, phrai could be described in English as serfs. However, just as ammart today does not mean necessarily landed gentry, phrai does not strictly exist, as there is no longer legal serfdom in Thailand. It would be equivalent to the peasantry of the four occupations of China. The people (Thai term: *prachachon*) is used in contrast to the ammart (Kontio, 2014). Strictly, phrai would be serfs and prachachon would be freemen.

While both the terms phrai and ammart in theory could be used in a clearly defined sense, their semantic fields have been widened by their use in political discourse, and they are now loaded terms for contemporary Thais. Thus phrai comes to mean the commoners; and the ammart, the hegemony (Kontio, 2014). This is the broad division as it is seen today. Historically sakdina would have formally given higher status to artisans and merchants than peasants, ascribing this to urban office workers and shopkeepers contrasted with factory workers and agricultural laborers is not a given and may fall into the trap of placing Marxist class analyses on a feudal remnant rather than a capitalist class society (Kontio, 2014). Maybe there is respect for scholars as part of this ammart as there was in the Yiddish society of the Shtetl (Zborowski and Herzog, 1995; Shandler, 2014; Petrovsky-Shtern, 2015). Educators do have high status in Thai society.

During the 19th century, a political question arose, asking, "*Who is a Thai?*" This process occurred across many countries, after the peace of Westphalia, when the concept of the Nation State arose. Such influences were present in Thailand, as the ruling classes were educated about Western concepts and aware of European currents of thinking in that respect. Religion, in this case Theravada Buddhism, played a part in the transformations of identity in Thailand. The outside influence of colonialism, to move toward the European concept of a nation state, rather than peoples who owed tribute to a ruler far away began to dominate nationalistic thinking. Without the nation state, land might be taken by a waxing power, as the Britishers had done in Burma. To make this more difficult, a more concrete identity was wanted. Thus, Thaification was begun by King Nangklao (Rama III) and largely realized by his brother King Mongkut.

Mongkut defined Thainess, based on his conceived view of the Central Tai as the definitive 'Thai', so those that met the criteria thus defined, as *Central Thai* were Thai. Many were actually Lao, who were redefined in this *Rassenpolitik* as Thai, despite their actual characteristics and thence Central Thai, by the caprice of the King (Streckfuss, 2012). Culturally, this Central Thai was not the same as those from Central Tai culture;ome features were adopted from Chinese cultures and some features were excluded. It could be claimed Central Tai is the culture we find today, more accurately Central Thai is that 'Central Tai' culture which was then altered or modified to become Central Thai. Thailand became the official name in 1939 with a constitutional amendment, "*to designate the name of the country in consonance with the name*

of the race." Section 3 reads: "*The name of this country shall be designated as Thailand (in English) and in the provisions of the Constitution or of any other law in which the word Siam is used, the word Thai shall be used instead*" (Smith, 1946:264).

Similarly, when the nation state, rather than the monarch alone, is defining the ethnonym: A Thai is a person who

a. holds Thai nationality, whatever their ethnicity. Therefore, they can be ethnically Danish, Karen or Hmong. Central Tai, Northern Tai (Tai yuan ethnicity, who were (are) the lowland, non-Hill Tribe Tai people of Northern Thailand) or Southern Tai, which are still distinct to some extent, are all possible Thai nationals.

Or a person who

b. is with an ethnicity derived from the modified, *Central Thai* culture. N.B. this is ethnicity, not race.

Correct terminology would be to refer to those who do not come from that Central Thai culture directly as Tai. However, looseness of meaning, through either sloppiness or deliberate political decision, means the term Tai is rarely used and instead Thai is commonly found, even though in strict ethnological usage as a term it is not correct.

Central Thai is a language and acts as a Dachsprache in Thailand in relationship to other Tai languages such as Isan (Northern Thai). Many people in Thailand regard these languages as dialects in a pluricentric language, rather than as actual languages, perhaps even extending this process to Lao, which has a level of mutual intelligibility with Central Thai. Maybe it is part of a dialect continuum from Central Thai to Isan to Lao. A similar aspect may apply to cultural traditions and behaviors. For example, the wandering Forest Monks of Thailand were closer to village ways of Northern Thailand and Isan than to the settled agriculture of the Central Tai culture (Tiyavanich, 1997), and these behaviors of peripatetic religion were discouraged in favor of settled Temple based, less embedded in nature ways. Thereby the monks were brought inside the world of man, rather than let alone in the spirit world of the forest. Drawing boundaries between languages and dialects, cultures and subcultures becomes a game of lumpers and splitters beloved of taxonomists and is not the focus here.

As Central Thai is a constructed identity it can be harder to describe how people actually are in this culture, rather than how they are imagined to be. It makes it difficult to trace clear roots for behavior, values and other aspects. However, all cultures undergo transformation, which is often gradual or not easily perceptible to those living within them. For example, English culture of the Edwardian Period (1910-1914) was much more patriarchal, hierarchical than the English culture after the Baby-boomers reshaped it toward the more egalitarian directions, much as we find it today with the Millennials. Yet ther9e are individuals who lived through all these periods, describing their culture as being one or the other in an excluding way would be erroneous. So my description here contains a mixture of imagined / constructed identity and the reality and where I can indicate the difference I do.

The constructed notion of Thainess is called "*khwaampenthai* […]*What this means in practice is that the notion involves the subjection of a Thai citizen to the Thai state; it subjects the Thai citizen to be loyal to Buddhist religion, and loyal ultimately to the King, who is the head of the religion inside the country*" (Kontio, 2014:79). This hierarchy in turn subjects the King to "*the ten kingly virtues / dasabidba-rajadharma*" (Kobkua, 2003:22) which are derived from

Buddhism (Hewison, 2010) and thus moral principles are subjugated to "*a hierarchical conception of society*" (Kontio, 2014:79). This is the academic consensus, which explains the explanation and definition given by that state, but another interpretation can be based not on the pronouncements of this official state view, but argue rather that Thais are tolerant of other religions. Rather than being a "*Defender of the Faith you can also be protector of faiths* …[with] *a duty to protect the free practice of all faiths*" as Prince Charles of England would be if ever King (Clarence House, 2015:"Inter-faith dialogue" para. 3). The monarch of Bhutan is required to defend faiths (Givel, 2015), and as a nearby successful Buddhist monarchy is influential on perceptions in Thailand. To my mind, Central Thai perspectives on religion are closer to this *laïcité*.

Numbers of Thais

How many Central Thais are there? First language speakers of Central Thai (note Central Tai is a different language from Central Thai) were estimated in 2000 at about 20 200 000 with a further 40 million competent L2 users (Ethnologue, 2016a). Extrapolating, from the population figures of 2000 would give 53 million today. This would include all the Tai ethnicities and Tai language variants, but would exclude those outside the country who are in the Thai diaspora. Ethnologue (2016a) suggests a total of 60 489 750 total speakers worldwide.

Central Thai identity has adopted a lot of Chinese cultural features and linguistic aspects. Central Thai are not only Tais. Many with Chinese backgrounds are active in commerce, banking and politics to a greater extent than those with other heritages.The continuum sees those with more Tai than Chinese ethnicity historically involved in village based agriculture rather than urban-based businesses. This is reflected in the ownership of rice mills, which are predominantly owned by those who could be described as 'Thai Chinese'These Thai Chinese are distinct from recent Chinese immigrants and distinct from Hmong or other ethnicities, which originated from China, but have maintained their own separate cultural, ethnic and linguistic identities.

Theravada and the Thai Forest Tradition of Buddhism

Ethno-religiously, Central Thais are Theravada Buddhists. Yet the current format of the religion is sexist, with women not allowed the same status and opportunity as men to be monks or teach. There is a rise in secularism and some diversification into other religions by Central Thais. Some maintain that Buddhism is not a religion, but an approach or way of life and as such is a belief system, which means it is not followed by believers in quite the same ways as religion would be.

Along with Buddhism in the recent past was a strong belief in spirits and spirit houses. While strength of belief varies, most Central Thais are aware of spiritualism, and may keep a small spirit house on their property or near to it. Where I mostly stayed in Chiang Mai there was such a house, although the owner a Central Thai did not believe nor do anything with the little house, she did not remove it either.

The spirits and perceptions of them can affect interpersonal relations, jobs taken and some behaviors. This is much less than in the past and belief in these aspects is largely seen as for the less educated or historical when talking with educated Thais. However, the giving of money in Buddhist temples and visiting temples or consulting with monks over problems is common, showing that secular rationalism is not the dominant view.

To those who are not Buddhist the term Theravada (Pali term: *theravāda* meaning elder's doctrine) (Crosby, 2014) needs explanation and some contextualization re Thailand. Buddhism arose in India and various strands were carried to other countries. Over time, questions about the exact form, and what should comprise good practice arose. Nevertheless, the diversity of form was generally tolerated, until the Third Buddhist Council was held where an approved group of monks met and defined what they considered acceptable within the teachings of Buddhism. Details and dates are disputed. The Christian equivalent of the Buddhist Council is a synod.

From the 1000 monks who attended, some were selected, and they took the acceptable teachings from the Third Buddhist Council in a missionary way to different parts of the world. Some of them went to Sri Lanka and then spread that form of Buddhism further into Thailand. These forms from that Third Buddhist Council are known as Theravada which means 'school of the elder monks'. Theravada is sometimes called 'Southern School' as opposed to other forms such as 'Tibetan' or 'Chinese'.

Although this Third Buddhist Council removed many heresies from the teachings and threw many unsuitable monks out, during the subsequent spread of Theravada variations crept in and in some places syncretism occurred with local beliefs creating new forms of Theravada. This is what happened in Thailand, with many practices based on belief in spirits being incorporated into the practices of the Theravada organized religion. It is thus somewhat of a misnomer to talk about Theravada as one form, it would be like saying Protestant Christianity without differentiating Anglican from Lutheran for example.

Theravada in Thailand was thus not one form of Buddhism, but a diversity of forms affected by other religions, especially Hinduism, Daoism and certain spirit beliefs. Such variety was not pleasing to a very religious man called Mongkut, when he saw that the words of scripture did not match the practices of those claiming to be practicants. As a result, he sought out; what he considered the pure form of Theravada, which was closer to the Pali and Sanskrit writings; seemed to match the teachings of the Buddha, and was focused on certain religious aspects, which were more community oriented than individualistic. The source of the pure form for him came from the ethnic group the Mon people. He made a more definitive reformation from this source combined with his wisdom and reading of the old texts over decades. As well as a monk, Mongkut was a gifted linguist and right-thinking religious man. Mongkut then became the King of Thailand.

As a result, Thailand that was already predominantly Buddhist, took this reformed movement of Theravada Buddhism, adopted and modified it to install it as a state form of Buddhism, which was based in Bangkok and thus Bangkok forms or interpretations became dominant. Other forms were attacked and deprecated. For example, one other form is called the Thai Forest Tradition (Tiyavanich, 1997). This form was greatly respected and influential, but was eclipsed by the more Bangkok based form. The Thai Forest Tradition was a form, relying more on wilderness training and self-actualization by realization through meditation, than study of scripture under a tightly controlling abbot. Due to the way of learning it required wandering monks to spend extended periods of time away from large settlements and many of the monks went to the remoter, rural parts of Thailand and taught aspects of their philosophy to the villagers they encountered. The monks worked closely with the local people's needs, and desires, and commonly went into the natural surroundings outside a village and took wisdom from the local nature.

Other forms of Buddhism can still be found in Thailand, as there is freedom of religion, but the elite and the legal system have supported the Bangkok form of Theravada Buddhism in various ways above the other forms and religions, for example women were forbidden by law from being ordained. Though it is not an established religion in a political sense, the Thai Royalty who are the head of the country are Buddhist and the Palace Law which lays out succession says the Monarch must "*serve as Upholder of Buddhism*" (sic) (Millet et al., 2012:89). Queen Sirikit opined she, "*did not want Buddhism to be involved in politics, which were often dirty*" (The Nation, 2007: para. 3).

So while Theravada Buddhism is officially beyond politics, it has not stopped scheming religious people and some groupings attempting to use Buddhism and aspects of the power and influence it can bring for political and financial purposes. These extend into affecting natural resource management and the praxis of community forestry. In some ways the ostensible desire to educate the indigenous people away from destructive practices in the national parks are really about removing them from their traditional ecologically sustainable ways of life to a more low land existence away from communities in the forests.

Groupings within the culture

Do the Central Thai have clans? Prison culture shows division is based on the geographical origin of an prisoner, rather than any family or clan system (Sirisutthidacha and Tititampruk, 2014). Central Thais are happy to marry outside of their ethnicity. Many women marry rich foreigners and go to live with them, adopting the cultural norms of their destination culture. Even so, they are not rejected by their home culture, and can be bi-culturally accepted if both cultures permit that. Men tend to marry less outside of their culture. This is a reflectance of Central Thai culture being patrilocal, which can be perceived by women in that culture as patriarchal. While in Thailand at Chiang Mai University I heard an argument after a presentation, where Dr. Chayan Vaddhanaphuti (the director of RCSD & CESD, Faculty of Social Sciences, Chiang Mai University) maintained Thai society was patrilocal and Malikhao Patchanee (a feminist PhD candidate) maintained it was patriarchal. All the Central Thai women I have met are quite confident and liberated, so if there was a domineering patriarchy, this admittedly anecdotal experience suggests contemporary Thai society has evolved away from that.

Tai people that migrated into Thailand brought with them their class structure and minor nobility. They were a Buddhist people and the upper classes were literate. A Thai written language standard, was created from several scripts, thus is properly referred to as a script and not an alphabet. Thais have a proud relationship with their own names. Official names are commonly long, and most will replace this with a shortened nickname that may reflect characteristics, personality of the person or sometimes given by a parental wish. Some nicknames are common to many people, as with first names. Official names are given due to reasons of legal requirement, although there is a free name culture in Thailand. Publications may use nicknames, full names and either a family or first name. Some names reveal connections to the nobility. Place names often reflect the topography and maybe linked with physical features that derive from natural resources. "*Names of the native flora and fauna … constitute a large percentage of the words used in the specific part of the names of smaller villages and streams*" (Smith, 1946:268).

How do Central Thais relate to other groups and intra-group? Thailand "*has stressed the importance of minority assimilation to established and privileged norms, and succeeded in propagating a general perception of itself, both domestically and internationally, as ethnically*

homogenous" (Bianco and Slaughter, 2016:191). As a result, rather than integration, assimilation has been the general focus of educational policy, though diversity is becoming more widely recognized in policy, there is still not the broad view of a truly multicultural society from the dominant Central Thai mediated discourse. In Thailand, identity politics has not been a strong feature of inter-ethnic relations, due to the status of the Central Thai language. A slight of hand has presented Central Thai as a language to be used and of high status, with other Tai or Thai language variants presented as less prestigious mere dialects of that high status variety. That most people did not speak the Central Thai lect has not led to a politicization in the main around other variants as equally valid nor as equally desirable in usage. A more pragmatic approach has been taken, which means most Thai citizens will adopt Central Thai as a lingua franca and even take Central Thai names for official purposes.

Central Thais tend to view the Hill Tribes as a single, loose grouping without distinguishing between their ethnicities, thus form a stereotypical view of them. This othering tends to see the groups as inferior to Central Thai, but with exploitable features. *Tourism*, facilitates cultural exploitation and to a limited extent cultural (mis)appropriation (Leepreecha, 2005). Notably there are: visits to Thai Hill Tribe villages, the worst manifestation of which is the human zoo (Trupp, 2011); fake ethnic clothing; questions over ownership of residences and official non-official buildings. *Natural resources*, have suffered: out-right stealing via tree concessions; nature reserve gazetting to take land; selling them to foreign concerns; and control of the distribution networks of products, farm inputs and produce on-processing. *Labor*, is exploited by social engineering, which controls access to higher education and ongoing professional development by use of the policy mix.

Other ethnic groups may be related to differently, but are generally not looked at as equivalent in status to the Central Thais. Shifting cultivators are to be settled into villages and peasantized to agriculture-based existences and then socialized through education, and historically religion into Central Thais. Thus becoming Central Thai is relatively easy for others. Much in the same way that manumitted Roman slaves' children were full Roman citizens, others with children who regard themselves as Central Thai will have children accepted as Central Thai. Thailand has a larger number of languages (51 indigenous and 21 non-indigenous) (Ethnologue, 2016b) and ethnic groups which are swallowed up in the Central Thai national identity via Thaification. Thaification leads to treatment of these variations as subcultures; the resultant process, tries to make them conform to the structures of this Thaificated society.

So for example villages are to have a headman, funding is done on the village or community level and interactions are largely dictated by a centralized bureaucracy, which has followed the French model of *déconcentration*, which is an elitist and functional *localisation*. This *localisation*, which is the opposite of what it sounds like, consists of putting into local places officials and procedures that follow a rigid central conception of how things should be and should be done (Gourevitch, 1980). The Thai state tends more to a modernized form, called by Gourevitch "*Modernized Jacobism*" (Gourevitch, 1980:62). An example of this is how Prime Minister Thakasin Shinawatra related to the Malay Muslim population of the South of Thailand. Rather than; empowering and accommodating dissension with subsidiarity; military force and brutal policies were enacted to enforce compliance with use of the Central Thai language and legal system.

Socialization occurs through the education system with teachers, being civil servants and having come through the academic route that has tied them financially and socially to Central Thai ways. This is much as teachers in the UK were taught RP and etiquette in the 1950s. Socialization in England happened through the teacher training colleges, to some extent, but to

a much greater extent through the schools with expectations being set and enforced by dinner ladies and teachers upon the children (Petz 2015, pers. comm., #3). Susanna Kieksi states that this effect of socialization by pedagogues is present nowadays in Finland kindergarten dinner culture (Kieksi, 2014). This process of socialization via formal schooling makes it much harder for other groups to be integrated, without assimilation and loss of cultural identity. The Chinese show it is possible though, with Chinese markets being supported and protected as part of Central Thai culture (Sirisrisak, 2015).

Central Thais and forestry

The Central Thais originally lived from agroforestry, but over the 20th century the remnant, living like this reduced, not least because cutting down most of the trees makes forestry harder. Forestry has been replaced, with more settled agriculture, largely rice and vegetable growing. At the same time, there is a rural to urban migration and increasing numbers of Central Thais will be educated and live in cities from non-farm jobs. At present there is little romanticizing of the agrarian-rural ways of life and those that engage in this are seen as less educated yokels. Here I believe this is due to education and the socialization that goes with it, rather than sakdina or Marxist class distinctions, but more analyses of attitudes would be needed to clarify the weighting of the different components in shaping this belief. Similar attitudes are seen in other cultures, for example Chinese perceptions of rural to urban migrants, which are reinforced by its system of household registration (Chinese term: *hukou*) acting as an apartheid régime for rural Chinese (Wang et al., 2015).

This transition plays into narratives of development being synonymous with progress and is part of the broad cultural myth modernized Central Thais believe. Along with this modernization has come some respect for the environment, partly led by the last King, and proclamations to protect the forests and natural realm of Thailand. Initially this was motivated from an economic forestry perspective, but now an ecological one is found too. This is partly underpinned by (eco)tourism, common values found throughout humanity, broad trends absorbed from other countries and movements as a part of globalization, but also Buddhism. The Buddha came from a forested village and spoke in favor of trees and nature. I saw in Temples in Thailand paintings of the Buddha in such forested landscapes, and veneration of the Buddha from such iconography would naturally lead to veneration of the forested surroundings he is pictured in.

There is forested land in Thailand, though it has lessened to a considerable extent over the last century. The Central Thais have treated forest resources as money to be picked-up. Efforts to care for the forest and restore it have been half-hearted at best. Instead of engendering a strong local education in forestry research, foreign researchers have been responsible for much of the forestry framework setting. This has often meant an approach that has advocated modern forestry, scientific forestry, economic forestry and the normal forest model derived from Europe. Even sustainable forestry has been tinged with this tone and is colored more by an economic rather than ecological sustainability wash. It is claimed, that as this has not been a natively developed forestry tradition, it has not worked well with the existing ecology (Usher, 2009b) (cf. 2.8).

It is a moot point, as to if forestry in Thailand had been developed only by an endogenous Central Tai native development, it would have worked any better in ecological or other metrics. Karen activists say not, via their critique of technology that "*it's not good, it's not sustainable, it's harmful in a way*" (Odochaw in Lindner, 2014:31). Thus, these are non-Karen ways of existing with the forest, which implies they do not see Central Thai culture as a sustainable way

to interact with the forests, even if they are forced to adopt these ways to survive (McKinnon, 2004).

More recently, as there are more, well-educated Thai ecologists, the relationship with foreigners has altered. While there is still respect for foreign knowledge and expertise, more important now is that the prestige of science and technology is bestowed on Thais. As a part of this approach, foreigner initiatives may be copied or taken-over to be run as Thai endeavors.

I saw in The Queen Sirikit Botanic Garden (QSBG) an exhibition on *Thai Botanical History* about researchers in Thailand. Images from the life size diorama of that exhibition can be seen in Figure 2-1. The models show a westerner (Thai term: *farang*)[7] and Thai researcher on field collecting exhibitions. It was framed in a way that suggested the Thais had learnt from foreigners, and now were independent, and perhaps better than them in natural sciences. I looked in vain, for a happy ending in this narrative progression through this exhibition, where Thais and foreigners would become comrades in science researching together as equals. Instead, the story of the exhibition ended with the Thais as dominant having thrown off the yoke of submission, or at least inferiority to foreign mastery. As of yet the idea of joint partnership for gaining credit is not universally shared by all the Thais, which may lead to partiality and jealousy amongst less enlightened or forgiving foreigners. The clothing worn reveals a colonial or neo-colonial aspect, as the researchers are not indigenous people in their traditional clothing adapted to the environment. This is even more ironic as at least one of the guides to the exhibition was an indigenous person, who was asked to wear traditional clothing at times during his guiding of school groups.

[7] Originally farang was derived from Frank and meant of European origin. In recent years the term has broadened to include all western foreigners, who may be African Americans, but are unlikely to be African Africans Eromosele, D.O., 2015. Being Black in Thailand: We're Treated Better Than Africans, and Boy Do We Hate It, The Root, Univision Communications Inc., New York, NY, USA, http://www.theroot.com/articles/culture/2015/05/black_in_thailand_we_re_treated_better_than_africans_and_boy_do_we_hate/ Page 1 archived at http://www.webcitation.org/6ko4cFWPi and page 2 at http://www.webcitation.org/6ko4mdWq6 26.09.2016,26.09.2016..

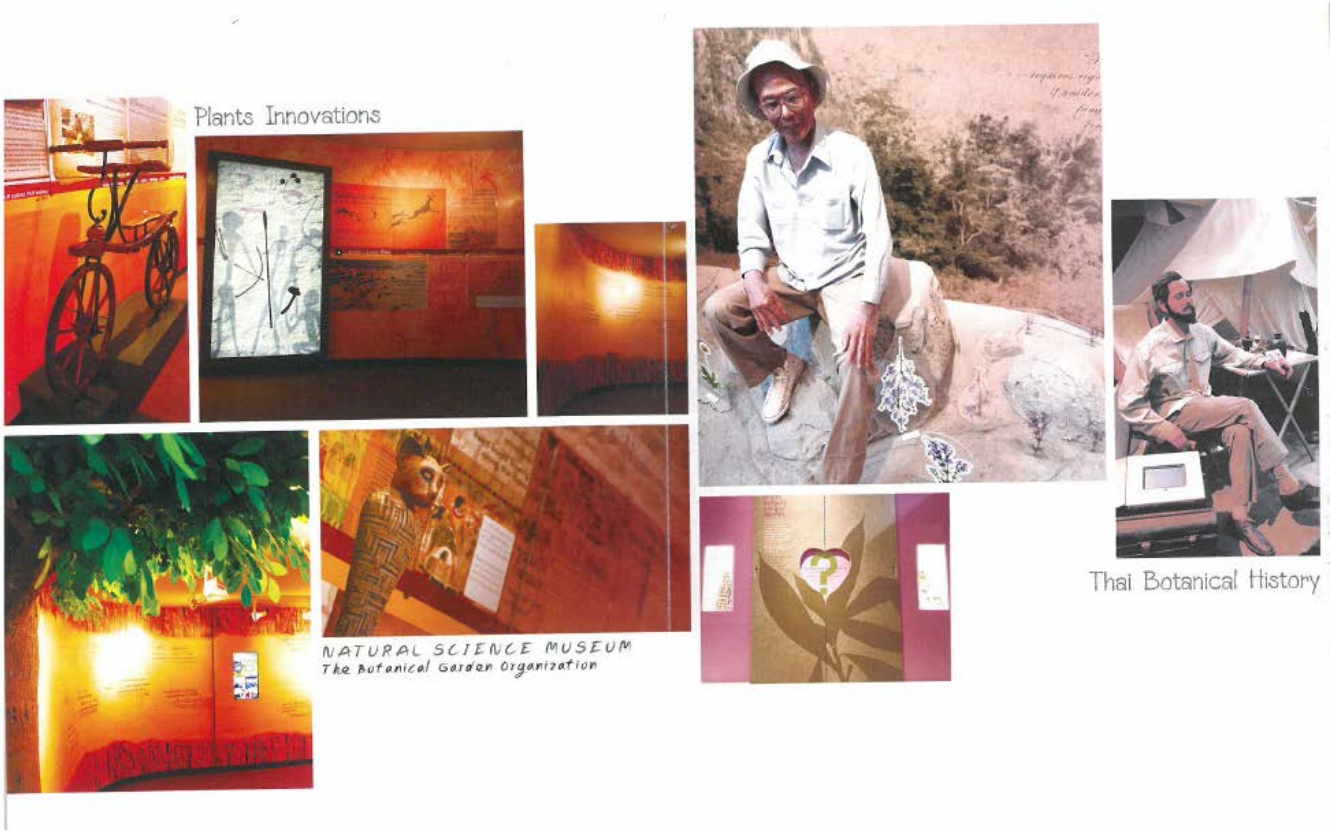

Figure 2-1: Leaflet from the exhibitions. Source: Brochure at The Botanical Garden Organization Copyright: Ministry of Natural Resources and Environment.

The monarchy plays a part in supporting the trend of greater ecological knowledge within Thais via action-based research. Thus, flowers are supported by Queen Sirikit in Mae Sa, and her name was given to the botanical gardens there. Trees, were supported by King Bhumibol Adulyadej, the various Royal Projects (cf. 2.6.3), and a desire for the RFD, to run reforestation schemes.

Individual urban Central Thais may be aware of forests and forestry as a folk memory or from their ancestors, but by in large they are distanced from it. They take a visiting the countryside as a leisure expedition approach. On a religious level there is respect for Ajahn Mun Bhuridatta Thera, the forest monk (Tiyavanich, 1997). Mun's figure, as a bronze statue can be seen in some houses, which I saw in Bangkok. This figure is not prayed to, but used as a memento or icon, to be venerated, for meditation, reflecting upon and in some cases as a political statement, much as someone may have a picture of the Rev. Martin Luther King Jr. on their wall (Vergara, 2013).

Thailand has undergone and is undergoing a major rural to urban migration. Those migrating to urban settings are adopting Western modernist ways in their behavior. They are taking aspects of the Western culture and making Thai localized versions of them. For example, food habits are moving to more meat-based diets. St. Valentine's Day has been adopted and linked more directly with sex than romance or friendship as would be found in other societies. Although links with the rural origins may be maintained, urban value systems are becoming more desirable. So for example working in an office is seen as higher prestige than working on a farmstead. This is facilitated by an increase in educational opportunity, due to easier credit for studies, a growing university sector and professionalization of employment. Thailand has become a richer country and with rising prosperity and reduced poverty there are more resources available to younger generations to pursue alternatives to agrarian existences.

2.6 Thailand's institutional background

2.6.1 The distribution of power

Thailand is a modernizing country of around 66 million people that has seen recent significant social and economic change (Junlakan et al., 2013). It is a constitutional monarchy that has been ruled over the last century by a mixture of the military and a "*bureaucratic polity*" (Riggs, 1966), which has more recently been questioned, and now more precisely described as a "*network monarchy*" (McCargo, 2005:499). This network monarchy is shown by "*active interventions in the political process by the Thai King and his proxies*" (McCargo, 2005:499), such as the former prime minister and current regent General Admiral Air Chief Marshal Prem Tinsulanonda and the army which form political networks centered on the monarchy. "*Network monarchy developed considerable influence, but never achieved the conditions for domination. Instead, the palace was obliged to work with and through other political institutions, primarily the elected parliament*" (McCargo, 2005:499) (Kontio, 2014).

Thailand is a centralized state with the capital Bangkok deciding many things by policy and influence partly through a process of territorialization (Vandergeest and Peluso, 1995). Yet regional cultures persist, though the concept of what the regions are and where the boundaries lie has been changeable over the last century as "*ethnicity was subsumed by region. New regional identities (Isan Thai, Northern Thai) emerged already situated in an implicitly ethnic hierarchy*" (Streckfuss, 2012:427). There is further division between urban and rural that manifests in the North being rural and the South being urban.

There are linguistic and cultural differences between the North: which consists of the *Northern Thailand Region* (roughly where the ancient Kingdom of Lanna (Lan Na) was and includes Chiang Mai Province), and the *Northeast* Region (Isan) and the South.

I think that a more educated population is becoming more engaged in politics of the parties rather than politics outside of the system. There has been a long history of leftist opposition (Bergin, 2016) and numerous coups d'état (19) in Thailand's history since 1932 when the monarchy became a constitutional one after a bloodless revolution (Brown, 2014). The difference I think now is that the coups are no longer the maneuverings of only the elite, but they are materially involving the people too. Such broad movements of the tail wagging the dog can be seen across the world, with The Occupy Movement (Biagini et al., 2015), The World Social Forum (Patomäki and Teivainen, 2004; Group of Nineteen, 2005) and various manifestations of alter-globalization.

In Chiang Mai I saw that people were gathering and chatting in small semi-formal groups via physical meetings and telephone conferences to gain political education, in the sense of understanding the governance structures and democracy functioning. These fora stretched across the political spectrum and neither a leftist nor a rightist phenomenon, but certainly an innovation in the Thai context. Such increased capacity gives scope for community forestry approaches to arise organically with community led education in the indigenous communities around natural resource management. Furthermore, the change in the broader Thai society and especially the hegemony allows an understanding and interaction to develop from the institutional perspective. Such a change means society is not only ready for, but also actively demanding such changes.

Likewise, the manifestations and action on the streets was a tactic common to all political persuasions. The media discourse attempted to frame it as a simplified: red(shirt)-rural-leftist with strongest support in the North, and in the South a yellow(shirt)-Bangkok urbanite-conservative-monarchist dynamic. These simple dichotomies are not truly reflective and are oversimplifications of the situation. For example, the King, who had remained ostensibly neutral, perhaps due to illness, was widely respected by both 'sides' and the Crown Prince was said to be closer to the red 'side' than the yellow.

There are other shirt colors, blue (yellow proxy), pink (the King or neutral folks) and multicolored (against Red or Yellow damaging their livelihoods), black (against Red-shirt rabble) and green (army) that are referred to in the media, but are not large movements like the Red and Yellow (Palatino, 2009). The shirt politics is a reflectance of more educated people, who are now playing the game of houses.

I believe that in Thailand this way of doing politics has been empowered by the rising use of information technology. That has changed the format and possibilities of how people carryout politics, to one that is more participative rather than representative. People need to be educated and not just socialized to these possibilities. Thailand is open to many foreign influences through globalization, and has a liberal outlook with a significant population, that can and does access those trends via the English language media. This is exemplified by the range of television that Thai people watch, with a wide variety being available in a way that other régimes may be more restrictive towards.

Such a smörgåsbord of information sources was becoming available to the indigenous people and has a direct influence on where they learn from and what they learn, both via direct and indirect influence. Community action that is facilitated by Red-shirt politics and a more actively involved community level makes learning and acting on a community forestry level real. The dynamic of the society changes to become more participative, and less representational. While elements of self-organization are already present in the indigenous communities they can now be better supported with tacit or active involvement of the state in encouraging and informing about them, rather than passively allowing their traditional approaches to whither in the hailstorm of region and local lowland Central Thai opposition.

2.6.2 Major industrial sectors

Around 44.4% of the workforce associated with the agricultural sector (Chiengkul, 2015) and manufacturing. Thailand makes electronic components and PCBs and is "*ASEAN's largest production base in the electrical appliances sector*" (Board Of Investment, 2013:4). However, it is not producing high-end microchips and lacks fabs to make them, with "*many key components of the upstream electronic value chain, including semiconductor devices, ICs, and discrete components such as diodes and transistors, are still currently imported from abroad*" (Board Of Investment, 2013:12). So while electronic component production is a strategically important industry, the poor state of industrial upgrading means a future in a world of creative destruction looks worrisome (Intarakumnerd et al., 2016).

These modern industries necessarily require an educated workforce to be competitive and there has been a rapid transition from agrarian-based existence to the knowledge economy. This has seen a rapid expansion of the higher education sector at all levels (Chapman and Chien, 2015). The Thai state classifies the "*higher education institutions into four types: (a) research and postgraduate universities; (b) specialized (e.g., science & technology) and comprehensive*

universities; (c) four-year universities and liberal arts colleges; and (d) community colleges" (Chapman and Chien, 2015:5).

Thailand is known as The Land of Smiles (Gardiner, 1972) and the people are generally welcoming to those from outside and so many have come to retire there. In Chiang Mai, these were particularly from Japan and the Europeanized parts of the world. The ethnic diversity within Thailand is a strong attractor for anthropologists and cultural tourists from many places.

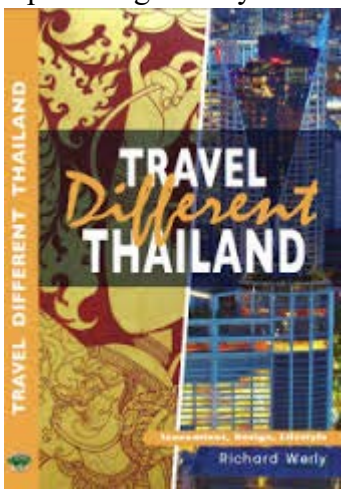

Figure 2-2: Travel Different Thailand Source: (Werly, 2013) http://www2.thaiembassy.be/travel-different-thailand/ Copyright: 2013 @ Royal Thai Embassy, Brussels

The tourist industry is significant and successful in many parts of the country. The forms vary from package holiday hedonism, to yoga with a more spiritual tourism and more recently a growing eco-tourism (Kontogeorgopoulos, 2005). Internationally exemplary forms can be found of tourism praxis and innovation, some of which have been collected into a book, which was launched in English at the behest of the Thai Embassy in Brussels and can be seen in Figure 2-2 (Werly, 2013).

Questionable aspects within the tourist industry can still be found such as the human zoos for indigenous people, cultural misappropriation and the treatment of animals. Tourism can be carried out for various reasons, but a relatively new development is the move from a freak show approach of learning about the weird world to one of education, from traditional cultures and sources.

The marketing reflects this aspect, as can be seen in Figure 2-3, where training by the indigenous people is strongly suggested by the words "*Trainning*" (sic) juxtaposed with images of Karen mahouts. Such gaining of skills from indigenous people manifested as global service learning (Jacoby and Howard, 2014), which is a reciprocal, experiential learning while good works are done in the host community (Furco, 1996) in cases experienced in my research. Elephant related tourism as the leaflets in Figure 2-3 promote, give a microcosm of the range of issues affecting tourism linked to Northern Thailand and particularly the Karen people (Duffy and Moore, 2011).

Elephants are respected in Thai culture. Traditionally mahouts, who keep elephants, were often Karen (Vorreiter, 2009a) (N.B. the red Karen shirts worn in Figure 2-3). Many Karen do work related to so called elephant rescue centers, which are identified by the use of "*care*", "*home*" and "*help*" as seen in the promotional leaflets in Figure 2-3. Elephant rescue has often been a tourist gimmick, with the elephants being illegally captured wild elephants, that are effectively abused with too much work and a poor diet. Efforts are being made to clean up the elephant business. Testing and certification does exist for ensuring proper care is taken of elephants and the mahouts who work with them. Aspects that can be enquired into are:

source of elephants - wild captured, bred in captivity for the industry, retired and or rescued animals from use in farming and forestry;

treatment of animals - rehabilitated to live semi-wild with proper varied diets, ridden like horses on trails, handled by mahouts, or tourists;

mahout relations - if they are properly paid, exploited as indigenous people, work as entrepreneurs or face a glass ceiling within the industry, Non-Governmental Organization (NGO) workers or are owners of the elephants that are contracted for a trail and trekking work or otherwise;

racial dynamics - most of the promotional leaflets for "*elephant camps*" which is supposedly "*wildlife tourism*", but in "*semi-captive settings*" (Kontogeorgopoulos, 2009) show white people with the elephants, some wearing Karen traditional shirts. Will perhaps the growing Chinese tourist presence see Chinese people on the leaflets? The related industries, such as hostelries and who has the ownership and benefits from them.

Figure 2-3: Elephant tourism leaflets collected in Chiang Mai city 2014. Source: Leaflets from left to right: Chang Siam Elephant Mahout Training School; Baanchang Elephant Park; Eddy Chiangmai Elephant Care; Jumbo Trekker – Elephant Trainning + Trekking; Jumbo Trekker –;Elephant Trainning; Ran-Tong Elephant (save & rescue elephant centre); and Woody's Elephant Home, all undated. Copyright: rests with leaflet sources.

There is a legal framework and ethical guidelines to shape the treatment of the animals, welfare of the traditional mahout communities and to protect wild elephants from exploitation. However, enforcement varies over time and place. Like many industries that use animals, for example sharks in aquaria, camels in the Egyptian desert and many small zoos the façade of animal protection and rights are used as advertising hooks and hide the fundamental aspect that wild animals are not living wild but are being used for the entertainment of humans.

Elephants as animals along with their environment are an important natural resource for tourist dollars in the Karen indigenous community of North Thailand where this thesis is geographically derived from. Tourism and how it manifests, directly affects the learning that must be engaged in by those to achieve sustainable land-use, stable livelihoods and for the natural resources themselves. Learning for the tourist market can be at different levels and with different focuses.

When I was in Brasil (2002), I engaged a teacher who was driving a dune buggy. He earnt more money driving tourists than teaching and he told me that all the things he learnt were of no use in that frame. Yet in Thailand, my analysis of the different leaflets revealed there is a competitive element between the camps. The competition focus, about a decade after my experiences in Brasil and Egypt (2005), appears to require a greater corporate education, which is the creation of new "*knowledge skills and values*" (Eboli and Mancini, 2012:339) in a company, in respect to elephant tourism in terms of ecological knowledge, animal rights and cultural awareness. It is not only the corporate training, which is how to use a certain tool or apply procedure or equipment, in how to manage elephants or show tourist groups around a trekking environment. This change is partialy subsumed under the term "*learning organization*" (Galinis, 2011:13-15), whereby the distinction between corporate learning and corporate

training seems to be becoming blurred with a focus from the individual toward the organizational level.

Elephant tourism is not separate from eco-tourism nor the whole tourist industry, but an integral part of it in many parts of Thailand. The same trends that can be seen affecting elephant tourism can be seen in other touristic activities (Kontogeorgopoulos, 2010). The same learning that is useful for national park transformations from wilderness preserves to leisure facilities can be applied to elephants.

Another industrial strength is *timber production*, which is increasingly plantation-based rather than the wholescale clear cutting of much of the last 150 years.

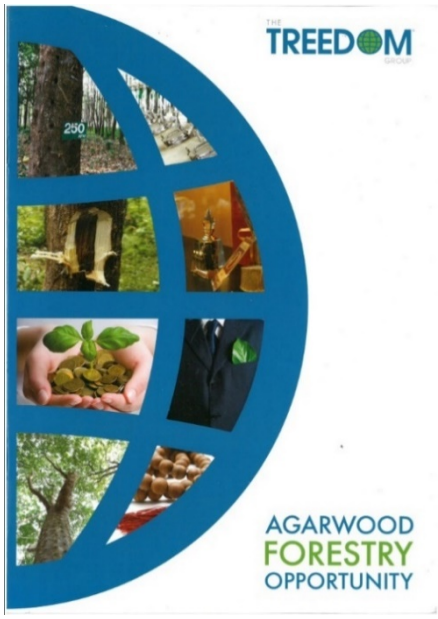

Figure 2-4: Treedom Group information brochure. Source: Treedom (Thailand) Ltd. www.asiaforestry.com Copyright: 2013 The Treedom Group.

Figure 2-5: Treedom Group marketing stand in Central Plaza Chiang Mai Airport Mall. Source:Own work. Copyright: Marcus Petz.

The Treedom Group promoted: *Agarwood Forestry Opportunity* as an "*accepted asset class and proven means by which institutions and private individuals can seek substantial returns on their money*" (The Treedom Group, 2013:3) to the general public at a marketing stand via an investment brochure seen in Figure 2-4 (left). They did this at a marketing stand in the up-market CentralPlaza Chiang Mai Airport mall seen in Figure 2-5 (right). Indigenous people in Chiang Mai have thus seen the natural resources, which they controlled change from being exploited by others to being substituted by plantation forestry. As they are peasantized by the New Theory's implementation, they also should be moving, according to the New Theory, toward a market approach. This requires some consumer education, and the form is via marketing in up-market malls as seen in Figure 2-5 on the right.

The Treedom brochure in Figure 2-4 (left) shows in the image money from trees and inside a magic money tree with the business suit and tie of corporatism. It does not show the indigenous people, nor nature as desirable outcomes. This visual education places money above people and

planet and is a subliminal advertising. As education as propaganda it has an impact on the indigenous communities in how they value their landscapes and heritage. In the same mall, the store Northern Village sells indigenous clothing and artifacts. Both the clothing and this brochure directly disconnect from the indigenous people in a way that creates a separation from the people and place. So that instead of the village reaching into the town a rural extraction results, which means the interrelationship is debased to one of money. An education is coming via that disconnecting process to the indigenous people, one that informs them that their only worth is instrumental.

It can be compared with the opportunities that are offered in the villages to the indigenous people. There visits, radio and roadshows have been used to persuade participation in financial opportunities and are commonly facilitated by "*local agents*" and "*money-lenders*" (Yimprasert et al., 2010:5). Such products are commonly loans, which are used for agricultural inputs. Such inputs are seen as an investment for consumer goods, such as televisions or motorbikes. Investment in agriculture may also mean loans to pay travel to berry pick in Scandinavia as can be seen in Figure 2-6.

Figure 2-6: Thai berrypickers in Lapland, Finland. Source: http://www.youtube.com/watch?v=kW7U9zS-c0M Copyright: 2011 Yimprasert, Junya; O H Productions; Migrant Workers Union Thailand.

Here education has been less about agricultural improvement and more about substitution. Substitution of traditional food security for cash crops; substitution of labor input in Thailand for labor input as a human trafficked sweat shop labour abroad and substitution of communal working with migrant labor.

2.6.3 Self-sufficient economy and the New Theory

While capitalism is the dominant way of seeing economics in Thailand, it is tempered by the idea of the self-sufficient economy, which was developed by the recently deceased King Bhumibol Adulyadej (nantichas, 2009b). While the idea is broadly applicable to all areas of economic life, it is commonly thought of as being for the agricultural and forestry sectors (Singsuriya, 2015). The Chaipattana Foundation was founded by the King, as an NGO to promote the ideas of this self-sufficiency through direct action projects (nantichas, 2009a). There is a network of development stations called Royal Projects, like the Khun Wang Royal Project, in Ban Khun Wang (cf. 1.3.2). These act to implement this conceptualization of a self-sufficient economy under the label the New Theory.

The Royal Projects developed organically over King Bhumibol's long reign of 70 years, and can collectively be called Royal Development Projects. The projects were sometimes run by foundations, some as initiatives by the monarch directly and some were handed over to other organizations including the Thai state. Some of the projects were planned as direct interventions in hill triber communities with agricultural extension services and creation of new markets for those products. Others were of broader educational usage such as an encyclopedia and a dictionary project (goong, 1990). An example of a Royal Project was "*the crop substitution project* […] *in the North. The objectives of the crop substitution project are to stop opium cultivation, deforestation, and the slash and burn cultivation methods used by the hilltribes. His*

Majesty has given advice and assistance to hilltribes on how to plant cool climate fruits and flowers, which yield a better income" (goong, 1990:para 9).

King Bhumibol had a direct influence on education in indigenous communities. He took an active interest and held patents on appropriate technology and worked to aid in designing of projects, with visits to project locations ensuring their implementation. He was also the Chief Scout for Thailand and thus through the schooling system every child will follow the scouting ways, (Barrow, 2015) which include bushcraft, environmental awareness and by extension an informal education of natural resource management particularly in a parks and touristic direction (McCulloch, 1992; Soykan and Atasoy, 2012; Martin et al., 2017). His most direct influence on framing the place of learning comes about through The New Theory.

The New Theory is split into three phases, which begin with land reform, followed by farmer cooperatives and financial support (nantichas, 2009b). The New Theory acts to develop farmer cooperatives selling cash crops (nantichas, 2009b) while at the same time serving as a method of consolidating power by peasantizing those who are not peasants and then turning the peasant farmers (which the majority of rural Thais are) into a petite bourgeoisie locked into a market economy.

There are further critiques of the New Theory. It is claimed the New Theory is vague (Singsuriya, 2015). The counter point to this claim is that the New Theory is a guidance and so deliberately broad and non-specific. It lacks an empirical basis, which as a new developing theory, like Gross National Happiness (GNH) in Bhutan (Givel, 2015) is difficult to refute without clarity as to what is being measured being supplemented with a suitable time series of data. (Easterlin, 2015) points out that short term causation can be seen with GNH, but not long term. Similalrly it needs more time to validate if the implemention of New Theory has been effective or not. Yet it is being implemented in the lives and communities of hill tibers.

GNH, like The New Theory, has emerged from a Buddhist perspective, created by a monarch that is Buddhist; this has ramifications for the impact of the theories that come from this perspective. The ramifications reach beyond the practice of land management to the wider society which "*impact the policymaking process and require to abandon the current "rational-instrumental" model of policymaking in favour of the alternative "constructivist" or "interactionist" models*[. And possibly] *challenging consolidated assumptions of what are considered to be the traditional aims and responsibilities of a state, the functioning of the media sphere and the public debate, and eventually raising a case for redistributing the political power between governments and social groups of different sorts*" (Cavaliere, 2015:56).

This interactionist Buddhist way is illuminated by highlighting organic farming, favored by GNH compared with conventional agriculture (Tashi and Wangchuk, 2016), which goes beyond crop growing to a whole system of existence as enshrined by the *International Federation of Organic Agriculture Movements – Organics International* (IFOAM) in their *IFOAM Principles of Organic Agriculture* (IFOAM, 2005).

Support for the New Theory comes from, cherry picked, successful projects claimed to be practicing the New Theory, but which were started before its definition (Singsuriya, 2015). Thus, are argued on the basis of the informal logical fallacy of presentism, and evidence from those who take the theory as an ideology that it works because it is their ideology which is a somewhat circular argument.

A last critique comes from the effects of the networked monarchy's hegemony. Everyone says they are following it and that failures are due not to deficiencies of theory, but deficiencies of implementation and understanding. The justification for this is that it is due to the lèse-majesté laws which make it impossible to criticize the theory and thus the King, but implementation and implementers are fair game for critiques (Wikipedia contributors, 2017).

The New Theory is counter intuitive to mainstream economists, who mostly follow the neoclassical synthesis and reductionist homo economicus thinking, rather than a more Austrian economist approach closer to the homo reciprocans concept.

The sharpest criticism of the self-sufficient economy idea is that Thailand is not following it in the main and is reliant on external revenue generation through exports generated income, tourism and the financial industry. The King who initiated the self-sufficient economics himself has indicated that the New Theory is not a universal, and this hints at the idea of it being closer to a solution only for Thailand perhaps on a mercantilist or self-reliance perspective in concert with globalized economics when considering economics at the national scale.

This is different from the North Korean economic self-reliance (Korean term: *Juche* meaning self-reliance) outlined in Kim Il Sung's *Theses on the Socialist Rural Question in Our Country* (Winstanley-Chesters, 2013). Juche aims at self-reliance alone; or the *Doi Moi* (Vietnamese term: *đổi mới* meaning reform) of Viet Nam, which is founded on forced collective cooperatives (Kerkvliet, 2005) undergoing partial liberalization from a command economy (Hakkala and Kokko, 2007) rather than a voluntary association of proven successful producers as the New Theory requires.

The King "*developed the New Theory as a system of integrated and sustainable agriculture, embracing his thoughts and efforts in water resource development and conservation, soil rehabilitation and conservation, sustainable agriculture and self-reliant community development*" (nantichas, 2009b: "New Theory: Integrated and Sustainable Agricultural System" para. 1). So ecological sustainability, not only economic sustainability was in his mind. As such, this prompts a questioning of the large number of chemical farm inputs used in Thai agriculture.

All these Asian theories are aiming to integrate the peasantry into the economic system so that peasant economics will be replaced with agricultural economics. Thus some question if an Asian peasantry is still present (Elson, 2016) and see within Thailand a transformation from peasants with the associated power dynamic and manifestations of a new polity (Walker, 2012; Phatharathananunth, 2016).

However, despite the reality of socio-economics being different from the philosophy of economics, the organs of the state are heavily influenced by the self-sufficient mindset and projects and actions are carried out with it in mind. NGOs and QUANGOs have both tried to carry out policy and argued that what they are doing is based on implementation of the New Theory. Here they are, not acting with evidence or science led policy. They are trying to use post hoc justification for the decisions they already made. Their implementation necessarily educates the target populations to manage forestry and farming resources in accordance with the New Theory and not traditional practices.

2.6.4 Regional and upland lowland dynamics

More recently as people have become more educated there seems to be a crisis of rising expectations, which has been capitalized on by different political factions to varying levels of success. This is leading to a transformation of Thai society and possibly the form of democracy. There have been laws that are more empowering of the regional diversity in a true decentralization and not a token cosmetic déconcentration of power. A closer analysis would be needed to weigh the balance between subsidiarity and arm's length control, which is not undertaken here (cf. 2.5 and 2.6.1).

This is the broad institutional background of Thailand, however within Chiang Mai Province there is another aspect that must be added. That is the dynamic between lowlanders and highlanders. It is made more complicated by the ethnic dimension. Different ethnic groups have different histories and ways of existing, which have varied interactions with other ethnic groups. This becomes more complicated when looked at closer and closer scales, but a broad generalization would see the Karen having captured the discourse of being forest protectors, whereas Hmong were seen as forest destroyers (Forsyth and Walker, 2008a). The Hmong are blamed for taking excessive resources, by the lowlanders that want the resources for themselves (Badenoch, 2011). This is part of the conflicts over "*water use in upland irrigation systems, …* [whereby] *… the Hmong and Karen, have transformed the discourse from a matter of forest management to a focus on water management*" (Badenoch, 2011:84). Thus, the literature and people may talk about 'watersheds' and not 'protection forests'. Consequently, both the Hmong and Karen who are forest peoples, which are being peasantized, may be limited in what others think of them. This perception, excludes them agency in being farmers, or foresters (Badenoch, 2011) or even agroforesters. This framing can be used by other groups for their own propagandizing, self-justification or resource monopolization.

In the absence of a functioning institutional environment, which is the situation in Hill Tribe communities to some extent, a proxy has developed. This is a rites based framework, which is detailed in *Table 1: The interplay between rites and rights based approaches.* with traditional ethnic structures. For the Hmong this is the clans, for the Karen and Lahu 'elders' who are operating with traditional beliefs, customs and religion, albeit adapted and repurposed for the changing situation in a settled agriculture rather than shifting culture it also has relevance. This rites based framework is supplemented by a legal rights based approach by the government creating a de facto institutional environment. For example, locally by the action and non-action of the RFD, which is acting not merely as a forest administration, but as a forest government with a governance remit.

The presence of village headmen (see below), a Thai government requirement, who can influence local policy and money allocation to some extent (Badenoch, 2011) is altering the power dynamic in favor of the rights based approach. However, I saw that this institution could be operationalized by the rites perspective: when I heard in Ban Mae Sa Mai, (Elliott 2014, pers. comm., #30 and Siwapataraprom 2014, pers. comm., #29) the village had been split into two villages, presumably with two headmen, with perhaps clan politics playing a part in such a split.

Level	Rights approach	Rites approach
Village Governance	Devise practical resource access rights based on new technologies e.g. PVC piped field irrigation system	Strengthen and adapt customary practices to increase village solidarity and mediate resource competition
Catchment Management	Devise formalized regulation of forest and land use to bridge inter-village and inter-ethnic group tensions e.g. Karen and Hmong farmers sharing a watershed	Construct informal arrangements for dialogue around water, with traditional leaders playing key rôle
Environmental Discourse	Assert traditions of environmental awareness to enhance legitimacy in public perception e.g. by publications	Raise internal awareness of responsibilities in and capacity for resource stewardship

Table 1: The interplay between rites and rights based approaches. Source: (Badenoch, 2011)pg. 85.

Acceptance of this hybridity extends to learning, with learning this way of approaching institutions validated by its practical application. Thus, learning institutions, fora and techniques are given currency and value for not only the users, but also the Thai state, which must work with the inhabitants of these 'ethnic areas'. The term "areas" is vague, but used here to avoid the Thai (rights based) designation for rural areas which are administered at the lowest level as a settlement (Thai term: *muban*, in Thai: *หมู่บ้าน*) which is roughly equivalent to a civil parish in England. We find the muban is run by a headman (Thai term: *phu yai ban*, in Thai: *ผู้ใหญ่บ้าน*) translated as a village headman (Moerman, 1979). The headman can and have been women since 1982 (Kelly, 1982).

The headman can be better equated with mayor (in Thai: *นายกเทศมนตรี*), as commonly "*directing the flow of power and resources through informal networks that readily bypass formal representative institutions and participatory mechanisms*" (Olthof, 2015:3). Therefore, it should be possible for this elected headman to adapt to ethnically appropriate ways of operating. However, the approval of the appointment by higher up in the Thai administrative hierarchy, the framing and constrictions on what is expected of the rôle can make that challenging to conceive and implement.

This rights based institutional framework does not include very well some of the learning situations I found. The place in Lahu society of parents is not well included if an elder man is selected as a de facto leader of the community. The idea of a dyad, which is the traditional Lahu way, or shared leadership rôle with a woman and a man being simultaneous joint leaders, is predisposed against. In Karen society, which is matriarchal, then women need to be included, but also a men's space has to be respected. This may not be obvious from a patriarchal society point of view, which is the Central Thai perspective, the dominant one and the one that due to historical patriarchal reasons has created an implicit bias against alternatives. In Hmong society,

one leader is not so good, as a small council that operates more as a collective that could include several leaders from different clans. In Hmong terms, a house better stands on 6 legs than 2.

2.7 Forest types in Northern Thailand

2.7.1 Forests as natural resources or human habitats

We can look at how we as humans conceive of and utilize natural resources, in how we classify them, the people that use them. From this our view of the forests naturally springs. Thereby is a framing, which can be referenced to our cosmology (our relational metaphysics (Zaidi, 1973)). As forest peoples (Chao, 2012) or foragers (Morris et al., 2015), we will have a very different way of describing forests than if we are coming from an agrarian background that sees the forest as a proxy for a field. Instead of planting, growing, and harvesting trees we may well live as a part of the forest and thus our classifications and descriptions of the forest will be different as we have a different culture if we are living within, rather than merely seeing the forest as a source of money. Thus, how we approach the learning component mediated by environment will be different.

There are no classification schemes, which adequately describe forests, including in Thailand. They all fail to sufficiently take into account the forest people's cultures in their descriptions. Such classifications could be developed. They might be described as biocultural forests.

Sacred forests are a kind of biocultural forest and are described academically in at least 38 countries (Mansberger, 1991). However, they are limited in geographical size. At a larger scale the potential for a how a forest based culture appears could give a culture and biocultural forest. An example where it would be possible so designate is found with the Karen in Doi Inathon National Park. There the Karen have demonstrated they engage in practices which do not destroy the ecosystem on which they depend (Dearden et al., 1996). A Karen biocultural forest has not been so named, but it could be.

At such a large landscape level there exists in Finland a forest-cultural interaction that has been recognized and named. It is the "*Semi-natural*" Sami Forest (Hyvönen and Elonmerkki –Signs of Life, 2006: "Lähde" 23:30); "*Sami Forest*" (Ibid.: "Greenpeace" 29:58). Recognition of this forest type is seen in Finland by activists who wrote the Sami-forest group blog (in Finnish: *Saamen metsä rhymä blog*; Lipiäinen, 2009), and produced the flyer in Figure 2-7 where they contrast the Sami biocultural forest with the forest of mainstream Finnish forestry.

Figure 2-7: Ikimetsä paperijätteeksi? 2009 Flyer designed by Saamen metsä rhymä activists. Source: Copyleft:Mikko Lipiäinen and Saamen metsä rhymä.

Fundamentally, this is due to positioning or framing. The paradigm of forestry and science as abstracted from a more integral or holistic view of things leads to a particular engineering approach of technology being applied that is not so inclusive of the cultural, and often labeled as scientific. While this label of 'science' is not quite accurate, it is actually technology (Chapman, 2012), it does atomize and commonly lead to ignoring of the cultural dimension. Weiß believes that silviculturists will take the position of "*forestry is forestry*" and not see that these different cultures have a bearing on management and forest typology (Weiß 2015, pers. comm., #5).

It would be possible to use in certain locations names that take into account some traditional ecological knowledge (TEK) being used to name forest types, for example in natural resource management and ethnobiological studies. This broader way of looking at forests is something I aimed at with this thesis (cf. 2.7.1) and Lawrence, (2009) who shares some of my cultural origins and perspective on looking wider and deeper in making meaning out of forestry science.

There are certainly more names that can be suggested for human-forest science interactions such as "*The Normal Forest*" (Leslie, 1966) although that concept of a forest type has certainly been realized, it has not been formally linked in name to a culture, nor a type location as well. Silviculture itself is confused here, with a German cultural approach being very clearly linked to an original location where a named silviculturalist practiced a silvicultural method such as the Target Diameter Method (German term: *Zielstärkennutzung*) of the Schlägl Monastery. Heinz Reininger who carried out the method regards the resultant forest as a Plenterwald (Reininger, 2000).Yet Plenterwald has been described from a specific area (Landolt, 1895) and concomitant culture, which should provide a comparative example as to how a biocultural forest might be described.

2.7.2 The forest classification used in Thailand

In Thailand, whereby the natural forests types are classified by the Food and Agriculture Organization of the United Nations (FAO) (Sutthisrisinn and Noochdumrong, 1998) based on "*Forest vegetation*" and so base them on vegetation alone, not wild animals, not usage or other metrics which some groups may use to define "forest". The Central Thai state has designated uncultivated rural land as forest in the process of territorialization, without particular reference to its vegetative characteristics. The FAO then say there are, "*two main types of forests in Thailand: Evergreen Forest and Deciduous Forest*" (Sutthisrisinn and Noochdumrong, 1998) and goes onto subdivide them into further terms.

These terms do not tell us, which ethnic group is managing the forest land. We can explore possible ways to do that with the over 300 years of recorded Taungya practice in Zomia (Menzies, 1988). A similar aspect would be if we were to consider International Union for Conservation of Nature (IUCN) Protected Area Management Categories within which there is a level showing just how natural a nature preserve is. Such a grading could be applied to closeness to Potential Natural Vegetation (PNV); primary forest type or in IUCN terminology "*Natural landscape*" and other aspects; secondary forest type or in IUCN terminology "*Cultural landscape*". N.B. This is an ecological fiction, as, due to ubiquitous human influence, no terrestrial PNV exists. Early IUCN schemes did contain more explicit cultural rather than nature focused aspects in its designations with its "*simple classification system: national parks, scientific reserves and natural monument*" (Dudley, 2008:3-4).

The IUCN system today has a more implicit rather than explicit cultural legacy of this anthropocentric view point. They recognize cultural areas *"have undergone more substantial changes by, for example,* […] *forest management that have altered the composition or structure of the forest. Species composition and ecosystem functioning are likely to have been substantially altered.* [And acknowledge] *the long-term stewardship of indigenous and traditional peoples where this exists; indeed* [accepting] *many areas remain valuable to biodiversity precisely because of this form of management"* (Ibid.:12).

They acknowledge with "*Category V: Protected landscape*" which includes as one the sub-objectives "*To maintain a balanced interaction of nature and culture through the protection of landscape and/or seascape and associated traditional management approaches, societies, cultures and spiritual values*" (Ibid.:20). IUCN believes "*the name is a matter for governments and other stakeholders to decide* (Ibid.:11) and thus avoid a systematic nomenclature that might provide a framework for biocultural forest landscape types.

2.7.3 Usage based forest classification in the Kingdom of Lan Na

These terms follow a Western Science oriented classification and are influential in Thailand. There are other terms to refer to forests in Thailand, as a long history of different ethnic groups means that there are synonyms and half-synonyms. For example, some of the usage based classification forests that are called spirit forests; do not differentiate between a Hmong sacred forest and a Lahu spirit forest that is separated from the village or a Tai forest that was kept as a designated spirit forest. These forests hold different tree spp. as religiously significant due to different religious rites and this affects the species mix and management to some degree. A Lahu nyi religion man's spirt forest is not the same as a Karen Buddhist spirit forest.

We can find details of a usage based classification shown in Table 2, which operated in the ancient Kingdom of Lan Na, roughly, where Northern Thailand is now. This classification was taught to Buddhist monks from about 400 years ago, who were young men and boys. The monks and disciples were taken from the villages and given a Theravada religious education. Forests and associated forestry aspects were taught in "*the temples which functioned as community boy's schools*" (Wichienkeeo). Thus, there is a centuries' long tradition of usage and understanding that is widely known in the region by many different ethnic groups. Pali scripts written on palm leaves record the names and practices associated with them (Wichienkeeo, 2009).

Pa Phae: The Forest as a source of food *Pa* (forest) and *phae* (grove). It was usually found near a village and was a source of NTFPs and food for local consumption, such as "*bamboo shoots, ferns, mushrooms, bananas, herbs, insects and wild animals*". The Law of Wat Kasa permitted 1 hours access a day for an individual to gather these.
Pa Dong Kam: The forest as a site of ritual ceremony *Dong* (forest) and *kam* (ritual). As a legacy from pre-Buddhist times, there were believed to be guardian spirits of the locale. Propitiation rites were held around the time of Beltane (summer beginning) called *dong sua ban* (forest guardian-spirit) or *pa dong kam* (forest forest-rite). This sacred forest had the cutting of wood or other disturbances forbidden. There is such a forest near CMU (dong of *Pu Sae Ya Sae*) where a ceremony is still carried out in contemporary times. Today the focus is the rice crop.
Pa Khun Huay: The forest as a source of rivers *Khun* (wellhead) and *huay* (beck). Within the watersheds the people saw that the source of the river was higher up in the mountainous forests. They made party to protect this forest and follow felling rules as a protection forest. So this was a protection or protective forest. This was backed up by fines, threat of being physically beaten and a ritual to pay respect to the source spirit. This continues with "*Every year, villagers from about 20 villages along the Li River in Lamphun Province gather to observe a ritual paying respect to the source of the Li River and pledging to protect the forest and to refrain from tree cutting.*" Here we see that there is a ceremony linked with learning good watershed management and concrete non-action linked with it.

Table 2 Usage based forestry classification in the ancient Kingdom of Lan Na. Source (Wichienkeeo, 2009).

Table 2 continued

Pa Yang: State forests *Yang* (forest). These forests in Lan Na were royal forests since at least the 13th century, and as such privileges were awardable to nobles, merchants and others so designated by the monarch. The custom was for these privileges to revert to the crown on the death of the holder. This meant that such privileges could rather than be granted, be sold to timber traders as concessions in the time of the British Empire. And they frequently were. Those that held the forest resources might harvest the resources or tax others that did. Resources in demand included, teak, black varnish, wild honey, wild animals, like game or bats and animal parts like elephant tusks and rhino horn and edible plants. The Lan Na people (Tai yuan ethnicity, who were (are) the lowland, non-Hill Tribe Tai people of Northern Thailand) split the forests into *hardwood forests* and *softwood forests*. Hardwood forests contained marketable timber for construction or crafts, resin producing trees. These trees were usually restricted under sumptuary laws for only the ruling classes use. The Softwood forests were used by villagers for home construction, weaving and rural crafts. Softwoods consisted of all bamboos and various reeds. It is clear that economic forestry was the designator here.
Pa Miang: Wild tea forests Miang (a type of tea). Villagers had a commoner's right to the tea for drinking above the mountain where they lived. 4 times a year they could gather the leaves and drink the tea. Some of these commons were enclosed by the state and became private property.
Pa Riaw / Pa Cha: Cemetery forests Cremation sites in forests were believed to possess a spirit. So a mixture of a practical location that would not be encroached upon, which made a boundary area between the forest and a settlement and respect for the dead led to these areas being designated. This was done by King Mangrai in Chiang Mai upon his foundation of the city after astrologers declared the area in an inauspicious direction.

Table 2 continued. Usage based forestry classification in the ancient Kingdom of Lan Na. Source (Wichienkeeo, 2009).

More recent arrivals; such as the Hmong, will have absorbed some of this, but have their own way of regarding the forest. Unfortunately, the shifting culture of Hmong and Lahu groups in Northern Thailand do seem to have been more destructive than the Karen practices. Thus, they have a less nuanced classification of forests from purely pragmatic reasons. They have a perspective, which is akin to the clear-cut perspective as found in Mitteleuropa in the 18th century. A perspective which is now changing in Thailand, as it did in Europe as a result of the shortages of wood, due to over-exploitation (German term: *Holznot* meaning wood need, which was a wood famine or wood emergency due to the destitution of timber resources) have had on relationships between people and forests in Mitteleuropa (Radkau and Schäfer, 2012). Dwindling natural resources seems to have influenced the Karen to some degree, so they became more sustainable in their usage, at an earlier stage in their cultural evolution as a forest people.

In Thailand only a few tree species are considered, whereas there are estimated to be around 3 000 species of trees in Thai forests (Usher, 2009b), which makes a good argument for a more diverse basis for forest classifying. There is a separation of the edaphical, topographical and geological – the 'non-living world' from the 'living world'. That does not reflect the animist, and perhaps more pagan, way of looking at the world where for instance brother rock may be regarded as having vitality (Povinelli, 1995; Morgain, 2013). The Hmong do have sacred trees and stones that influence management of the land and forest areas. The Karen do have connections to trees which influence and prevent some cutting. Both of these groups have seen spiritual aspects used to extend beyond the individual rock or tree (Morrow, 2012) in a rites based approach to educate on the broader forest level for management and usage of the resources to protect not only the trees, but also the watersheds (Badenoch, 2011).

Other indigenous groups might find it funny-strange not to divide on factors like these, or at least to alter the weighting for taking them into account. When looking at kinds of berries (as in the Baltic forests), snow (as in the Arctic) or any other category "*of vital importance to people living in* [that] *environment*" it is often said with merit that there are more terms in that culture's language than in another language (Pryde, 1971). These meaningful descriptors could usefully be applied in a forest type taxonomy, especially if the purpose of the taxonomy is for management for sustainable biocultural landscapes. This means that we should not try to convert folk taxonomies (folksonomies) (Hess Jr and Pollock, 2015) to a single scientific universal classification, but rather as "*ethnoscientists adopt an adaptationist stance in recognition of the fact that cultural knowledge is used to guide behavior*" (Hunn, 1982:830).

It must be noted that any classification is a simplification and abstraction and can miss out crucial information. Forest inventories are supposed to be all-encompassing and include these data. Unfortunately, they often focus on commercial and only more recently, biodiversity aspects (Corona et al., 2011). As of now, they are woefully inadequate when it comes to cultural and social surveying for example for rural livelihoods, community structures and viable villages and other communities that may find these as their habitat. Given this deficiency all that can be done here is to explore the ideas and issues around classification for Thailand, rather than arrogantly propose a perfected classification.

2.8 Historical development of forestry activities in Thailand

Natural resource management has a long history in Thailand. Anatomically modern humans have lived wherein Thailand's current borders lie since 125kya BP. Older hominins have used axes and fire therein since c. 1.7mya (Piper, 2015). While "*the biological and social changes and transformations put into play hundreds of thousands of years ago set the stage for the world we live in today*" (Larsen, 2015) they have largely been leapfrogged over by Thai State Forestry (TSF) as a concept on how to deal with the forested areas of Thailand. The dominant views expressed through TSF rely on "*the foraging-to-farming transition*" (Larsen, 2015). This transition has been completed at different times, by the different peoples of Thailand, but certainly by the urban dominant Central Tai elite in Bangkok by the middle of the 19th century. Thai forestry has evolved, from around the beginning of the 20th Century in Siam, under influence from colonial demands for wood resources. The dominant power so concerned was the British Empire, with a desire for a few tree species, notably teak and very few NTFPs.

As Siam went through its nation-state forming epoch over the 20th century, the Royal Forest Department (of Thailand) was the main actor in mediating a Thai State Forestry (TSF). A good

summary of how that process has played out is covered by Ann Danaiya Usher in *Thai Forestry a Critical History* (Usher, 2009b). I direct the reader to that book for more details.

While traditional forest uses by indigenous people, folk medicine and country traditions have always taken place, with some deep roots and long-term praxis, now they are being valued within TSF. This trend can be seen in other forestry traditions. In Finland, Metsähallitus - the *forest government* in translation, and effect given its rule-making and enforcement history- has moved from being focused on timber production and extraction as a source of state revenue to reforms that place more economic value on eco-tourism, nature preservation and wildlife gain (Saastamoinen, 2012).

The amenity value of forests has always been recognized, but not necessarily catered for. It was treated as an inexhaustible resource and a given in Thailand and many other places. Now it is explicitly being celebrated with the creation and extension of National Parks. The National Park Act 1961 says "*When it is deemed appropriate to declare a land which has natural features of high value but not owned or legally possessed by any party other than public body, the government shall have the power to prescribe a national park by a Royal Decree to preserve its natural state for the benefit of public education and enjoyment*" (Chettamart, 2003). Preserved land may be designated as: Wildlife Sanctuaries, Non-hunting Areas, Forest Parks, and there are some other restrictive categories on land usage too (Chettamart, 2003).

However, the extension of the Park network or preserved land, is not only preserving the forests for future generations, but is used in Thailand for nation-state building purposes (Roth, 2004). Contrary to the sentiment of keeping indigenous peoples within the land they have inhabited for generations, some longer than Thailand has existed, there is a desire to turf them out and prevent the traditional uses and practices that have been carried out there. Thus "*where local people are displaced for conservation reasons, it may be because of their own careful resource management practices in the past that conservation values are sufficiently high to warrant protected status designation*" and such alienation can lead to the alienated to "*engage in environmentally destructive practices that they would not have engaged in previously*" (Dearden, 1999).

There is some recognition that this alienation from newly gazetted parkland is not a good thing within Thailand. Ironically, in Northern Thailand a people-integrated-with-the-landscape perspective would more closely match traditional Tai and especially Karen sentiments of nature protection. These sentiments are encapsulated in the word "*thamachat* … [which] *originates in Buddhist teachings meaning 'things that occur according to forces of the universe such as human beings, animals, trees etc.'* " (Laungaramsri, 2002; Roth, 2004). It appears the separation in Central Thai culture has come due to Thailand importing, American and Western concepts of "*The National Park ideal and the ideal of nature as human-free*" (Roth, 2004). Though international pronouncements have yet to make a significant impact on the segregated mind-set, and thus the policies and policy implementation in this regard, they are now heading more in the humans-integrated-with-nature National Parks direction (West et al., 2006), (Appx. VIII, 2014), (IUCN, 2016).

There is still a view propagated by the urban dominated, literate people of the world and in Thailand too, that forest peoples are somehow backward, under-developed and need to be developed either as individuals or via cultural evolution to something else. While the endpoint of that development is vague, this viewpoint regards those that have moved away from local, low resource usage as somehow superior to those that have not.

There is some resistance to these neocolonialist views, but they have largely been intellectual and failed to convince many of the hill tribers who feel pushed and increasingly desirous of a different lifestyle from their traditional cultures. The pressure on them can be considered as manifesting in the same way that a drug pusher convinces early addicts of the advantages of their wares. The bribery and freebees in cajoled development can be shiny new motorbikes, solar cells on the roof, exotic foods and satellite dishes (Warner, 2016). Sadly, modernism often includes the easy availability of harmful drugs. Heroin, crystal meth and alcohol are the common ones infecting indigenous communities. The epidemiology of modernism shows all these inducements spread like a vile violence, through the human created structures of society. The transmission of these social maladies are similar to the way that a disease spreads, and might be countered through designing an appropriate kind of public health intervention.

The alternative way of looking at people in the environment in Thailand is to consider them, rather than as forest peoples and within a forestry discourse, as communities within watersheds and plan for natural resource management within a watershed. As part of that watershed comes the settlements, peoples, forests and agriculture. This thus is not making a relation between a city and hinterland, neither is it reducing people to being low-landers and high-landers, a traditional dichotomy found in Northern Thailand that carries with it preconditions and prejudices. Instead, it looks more as a whole system and the parts of the system being inter-related with each other. When the social element is considered this can extend to a community-rights-based approach rather than an external-to-the-watershed-system state controlling approach (Dearden, 1999). The rights, deriving from a sustainability with the land, of all these elements of the biocultural and geomorphological landscape. This rights based approach has been extended beyond simple biology of hominins to that of rites based, which includes the beliefs and praxis of those beliefs within the watershed (Badenoch, 2011).

This holistic watershed approach is very much a social sciences perspective, and is partially embraced by some NGOs and individuals. A watershed discourse rather than a forestry discourse is found today in Thailand. The wider region's dam politics have an influence on the prevalence of water resources dominating the discourse around human environmental interactions (Fawthrop, 2011). However, older ways of approaching things take what I term more of an engineering approach. The engineering approach may use the same language, but the understanding and lexical fields of the terms used are different. The term watershed, may well in the engineering approach, be based on reduction of land use to a system of strict land-use mapping that goes on absolute figures. Such a system may declare a plot of land is unsuitable for growing dry rice, despite an attested history of successful cultivation. This is because it is based not on historical usage, but on absolute figures imported from an American system that declares mountainous areas as unproductive within the area of cultural origins i.e. in the USA it would be uneconomic (Roth, 2004). Such a rigid interpretation rather than a flexible system is common to much thinking. In Thailand this rapidly breaks down, where resolving the inconsistencies between theory and reality means adherence to rules and laws is often not happening.

2.8.1 Swidden agroforestry

Traditionally there have been various forms of swidden agriculture practiced and a variety of terms used for "*related systems in the scientific literature*" (Rahman et al., 2016). This variety of forms, which fall under the label agro-forestry and may vary in practical aspects and sustainability depending on the local climatic, environmental and ecological conditions. For example, in Northern Thailand the broad division can be made into "*pioneer shifting cultivation*" and "*rotational shifting cultivation*" (Rerkasem, 1998). Although, swidden

historically was one bit of various agroforestry systems, now the forestry part is much diminished, and burning more often is about land conversion to longer-term permanent agricultural use rather than a stage in a de-foresting re-foresting cycle.

Current swidden praxis could be better described as agriculture rather than agroforestry. There are attempts to move toward swidden agroforestry with more consideration of trees as a part of planned cultivation, which "*can be more financially profitable to local farmers than traditional monoculture systems, and support the transition to permanent cultivation*" (Rahman et al., 2016). One barrier to adoption of such a system would be over land ownership questions, though lack of knowledge about the agroforestry is another major factor (Rahman et al., 2016).

Where active forestry decreases, it is more the case of populations being socialized and educated, so that the once forest dwelling or agriculture based peoples no longer look at those ways of existence as desirable. They are modernized from being agrarian-based to trade-based livelihoods. Consequently, too few people have the know-how (know-how is "*practical knowledge or expertise*" (European Centre for the Development of Vocational Training, 2014:146) and is always applied, the application of which is a skill) to make thatched rooves, and so there is more use of shingles, metal or plastic material bought from a trader. I saw this in several villages in Thailand. As the relationship with the land is altered the patterns of fallow crops and intermediate cropping are disrupted. It is no longer sustainable to have a period of recovery, if the recovery crop is not used, the costs of labor make it uneconomical and money replaces the way to get the needs fulfilled that the recovery crop once provided.

Consequently cash crops, e.g. cassava and Guatemalan hybrid maize (Usher, 2009b) instead of traditional food crops e.g. dry rice (Sierra, 2006) with cabbages (Rerkasem, 1998) are now being more frequently grown with the rice, after it was noticed that there were higher rice yields as a result. Increases, were perhaps due to better weeding, or more fertilizer for the cabbages which left a residue that increased the rice yields (Rerkasem, 1998). Despite the change of crop-mix, the way of getting the land is not so different. In much of the region that is done by slash and burn.

Slash and burn is a contributory factor to air pollution in the region. Periodically air pollution has a major impact with what has been called the Asian heat haze. The Asian heat haze is predominantly caused by forest burning. Another problem is the contribution to climate change that the land use change causes. These two issues are being dealt with at an international level by Asia-Pacific Economic Cooperation (APEC). APEC has an Expert Group on Illegal Logging and Associated Trade (EGILAT), which has a dedication to "*increased forest cover, research and innovation, indigenous community participation, enhancement of environmental education, … and capacity building, so as to promote sustainable forest management and closer forestry cooperation and exchange in the region*" (APEC Ministers, 2013).

The United Nations Reducing Emissions from Deforestation and Reducing Emissions from Deforestation and forest Degradation Programme (REDD) and REDD+ plans, act to achieve technical extension services via collaboratively working with local indigenous communities. The extension happens through supporting forest peoples in gaining education to be less impactful in terms of climate change related activities (UN-REDD Programme, 2008). Thailand has produced a REDD Readiness Preparation Proposal (R-PP) (Lang, 2013; Nguon, 2015).

3 Methods and materials

3.1 The cultural forest

There are elements we can see in the evolution of our own culture re the forests, as dominated by German forestry, those we should consider more carefully for a revitalized scientific paradigm. We have the idea of total land value (TLV) already (Wu et al., 2016). Though TLV can only be estimated and there are issues with valuing the "*worth of environmental amenities*" (Niskanen and Hanke, 1977) where often economic welfare is converted to price or dollarized to market resale value (Larson, 2015). TLV broadens our perspective somewhat, but does not reach ecological forestry in a way that integrates human culture (Simmons, 1996) and silviculture. "*Cultural evolution adapts human populations to their environments*" (Gelfand and Wilson, 2015) and thus explicitly does. Much profit could accrue from integrating insights from cultural evolution in our praxis.

As a legacy from mediaeval times, combined with the enchanted forest in our fantasies we culturally have a partial fear of the forest (Varner, 2006; Konijnendijk, 2008; Senior, 2008; Skår, 2010), which separates us from the forest. It others it (Plumwood, 2002). This othering has been seen in Thailand where the hill tribers (a they) and their environment (the uncivilized forest) is made of the other by the Central Thai mainstream culture (a we) that acts to colonize both the people and the forest (Forsyth and Walker, 2008b). A perspective of dominion over the Earth viewpoint, which is embedded in Abrahamist religions, rather than one of living with our brothers and sisters who dwell in our forested biocultural landscapes, is a further distancing influence upon our current biocultural relationship. Forest peoples are integrating much more than us in where they live, how they approach living there and how they relate to the other living elements in their landscapes (McKinnon, 2004). Our scientific paradigms have not been supportive of us doing that. Now we can recognize this separation from nature within forestry science we can look to heal the separation within our scientific paradigm too.

The search for integral culture alternatives

There are varied paths we could walk to heal the rift. We might use a different religious perspective, such as derived from a nature-based religion (Wilber, 2011). The craft of the wise, Wicca (Keith, 2005) or shamanism (Ingold, 1993) are examples. Perhaps an indigenous cosmology, untainted by recent attempts to rationalise away the lost elixir or the philosopher's stone, may hold a way to keep that Cartesian dualism integrated? We might become mystical and use renaissance approaches or alchemy like Leonardo da Vinci or Newton respectively. We could attempt Giordano Bruno's incorporation of geometrical, mechanistic approaches (Saiber, 2017), which has a much older ancient Greek origin. Scientifically we might question if these paths are fit for purpose are rigorous enough to weather the storm of disciplinary protest against them.

A more modernist step is to plunder the other half of dualistic thinking for its perspectives. By this, I mean artistic approaches, which enable us to look from a different perspective. In this thesis, I used Artistic Research Methods (ARM) as an angle to explore another way of knowing. I believe that after some development this *ARM paradigm* might enrich and enhance our existing practices. Art and Science could work together. The ARM paradigm can be applied for scientific purposes rather than artistic purposes. I go into the history of ARM and my choices

in below. I found that a useful way of analyzing what I found was to use "pattern languages". Pattern languages came from design science (Fuller, 1963; Broadbent, 2004). However, design science in itself is something of a misnomer. It is more of a technology than a strict science and is good for philosophers to debate when trying to resolve the demarcation problem (Farrell and Hooker, 2013). It incorporates aspects of art in application.

3.2 Pattern languages

Joe Brewer asks, "*Can we continue building ivory towers that separate us from nature as the systems of society destroy the biosphere on which all large animals depend?* […] *It is time to give our universities a major update. The ones we have now were built during the Enlightenment Era of reductionist thinking, when it was necessary to break reality down into manageable bits in order to study and make sense of it. But after 400 years of that important work it is now time to add a synthesizing layer on top of reductionism that weaves the pieces together*" (Brewer, 2016:para:11…para:19).

There is an implication here that studying in one way, leads to a quantitative exploration and number collecting of elements. Studying another way, or on top of the numbers, leads to a qualitative understanding, which Brewer thinks brings a synthesis. It would be relational studying with reciprocation, interaction and inter-relationships being explored. Thus, numbers alone make no sense. This solution of Brewer, to build on top of already broken pieces, only half works to my way of thinking. I think it excludes something. That something is the bit in the middle (Henshaw, 2015a). They are visually displayed better than verbalized (Henshaw, 2015b). Perhaps the "*in-between*" is found when looking at connective knowledge (Downes, 2007). Connective knowledge focuses on the relationship, which means it includes what is missing from a disaggregating or atomizing approach.

A way of studying both together is served by a pattern language approach. The praxis of this is counter intuitive. It is not rational. It relies on looking for connections and emergent properties, which arise from the unexpected juxtapositions of functioning artifacts. Rather than atomizing and dissecting an assembling and connecting approach is needed. This leads to integral insights about wholeness and complete functioning. Holons become evident and they can be seen and noticed when not holistic (Henshaw, 2015a). The description of these holons and how they relate together is what pattern languages do.

The concept of pattern languages was invented by Christopher Alexander when he looked at buildings. Originally he focused on the spatial arrangements and how they were problematic within a building (Alexander, 2007). He and his research team collected hundreds of patterns and upon analyzing, them realized there were commonalities, which led him to identify deeply configured properties (Ibid.).

These he distilled into 15 canonical properties, which are *Levels of Scale, Strong Centers, Boundaries, Alternating Repetition, Positive Space, Good Shape, Local Symmetries, Deep Interlock and Ambiguity, Contrast, Gradients, Roughness, Echoes, The Void, Simplicity and Inner Calm, Not Separateness* (CES, 2006; Bauer and Baumgartner, 2010b). To these 15 properties a 16th property is postulated, *mutability*(Leitner, 2015). Appx. I has a fuller explanation of these properties.

There are several other key concepts that need explanation to understand pattern research. One is "*living structures*" and another is that of "*strong centers*". Overall, pattern languages have led to some profound other aspects when understanding and considering them. Leitner

(2015:13) describes these as a "*new science … Pattern Research*" with 4 paradigms, and claims it comprises "*a large field, spanning many disciplines and containing many profound concepts*" (Leitner, 2015:1).

He goes on to say, "*The new paradigm of the pattern* [by which he means all 4 paradigms] *removes itself almost entirely from any concern about properties and puts its priority on a pattern's functional connections to other patterns. All the aspects of the pattern description – the problem, the solution, the set of forces, etc. – focus on how the pattern connects to its environment of other patterns. ...The act of focussing on patterns instead of categories as the means to ordering the world, focussing primarily on connections instead of differences, effectively overturns a 2300 year old intellectual tradition. It can be considered the implementation of the long awaited change from a linear to a systemic, non-linear, cybernetic way of thinking*" (sic) (Leitner, 2015:4).

Thus, it can be seen that Lebendigkeit (the living in living structures) is an aspect describing this interaction. (cf. (Leitner, 2015) on Lebendigkeit and its plethora of names with varied shades of meaning). Lebendigkeit can be rendered in English as vitality, and is dependent on wholeness. A vial of blood, a few bones and skin are not living. They are only living when assembled into a related whole. So assembled we gain wholeness, and vitality. This quality can be said to be beautiful when present and ugly when absent (Bauer and Baumgartner, 2010a).

Another key concept, to my perspective, is the concept of "*a strong center*". A strong center can only exist in relation to other centers and they make it strong, it "*defines the way that a strong center requires a special field-like effect, created by other centers, as the primary source of its strength*" (Bauer and Baumgartner, 2010:10). There appears on first glance to be a redundancy with this concept – how can it be both a thing and a property of itself? You must think of it as "*it's part of living that all living beings have a strong center*" (Nahrada 2016, pers. comm., #15).

"*Centers appear in both living and non-living structures. But in the living structures, there is a higher density and degree of cooperation between the centers, especially among the larger ones—and this feature comes directly from the presence of the fifteen properties, and the density with which they occur*" (Alexander, 2007:3). Strong centers can be thought of in a nested hierarchy such as cell, tissue, organ, organ system, body, clonal life form (siphonophore), ecosystem.

Given that Alexander "*defined a center as a field-like centrality that occurs in space. It is not an object. It is not a point. It is a holistic phenomenon that appears within a larger whole* (Ibid.:8). Wholeness as the way of seeing is crucial (CES, 2006; Seamon, 2007). *So we have a recursive phenomenon here: centers appear in wholeness; wholeness is composed of centers. Each center has some degree of life. The life that a center has is a function of the configuration of centers that surround it and of the degree of life which these surrounding centers have. In slightly different language, a living center is a center which is unusually dense in other living centers ….*" (Alexander, 2007:8).

Pattern languages are used in a wide variety of design environments with over a hundred application fields (Leitner, 2015). Patterns that are descriptions of undesirable aspects are called anti-patterns (Schuler, 2013). There exists the idea there are four domains or generations of patterns which go from the mundane construction of material objects up to processes of transforming society (Finidori, 2015).

Pattern advocates are now going beyond just collecting patterns to using them(Henshaw, 2015a). There are pedagogical patterns (Bauer and Baumgartner, 2010b), landscape eco-design (Yun-cai, 2011) and community garden design patterns (Walter, 2003). Application of patterns so widely is at an early stage and merely the idea of using them, rather than long-term practitioners in varied application fields exists.

3.2.1 Purposing the pattern research

Having established what a pattern language is the question arises, How could it be used in this research? I went to some learning buildings when in Thailand. I thought of the learning buildings I had seen in Europe and virtual learning environments (Aleshidi and Zeki, 2011) also used for learning. I realized that while there is a diversity in historical and contemporary usages, the buildings share commonalities. These commonalities and requirements can be mapped, recorded and the efficacy of the buildings can be scored against them.

For example, a building needs to cope with the weather; water provision is needed, eating space as well as sufficient lighting and space arrangements to be fit for purpose or purposes. These commonalities can be mapped and put together, not to make a blueprint, which would be a standardized building design and thus inflexible, but rather to make a heuristic map (heuristic device) that can act as a rule of thumb and checklist when constructing a building for certain purposes. A primary purpose or purposes can then be assured with that building. That heuristic map can be called a pattern language. And our building could be a learning building, or more specifically a building for learning connected to natural resource management.

An ecosystem is a good analogy to think of here when we are talking about learning buildings. Part of that thinking is the awareness that they are embedded in a social system. We have to include in designing and describing along with *our buildings*, non-living in the conventional biological definition of life, *the users*, living in the conventional biological sense, and the *environment*, which is both living and non-living in the conventional sense they are part of.

There is a long-term application of pattern languages in architecture, which suits us. In our case we are looking at pattern languages for buildings, which is what pattern languages were first developed for (Alexander, 2007). It is not enough, only to consider the buildings, as explained above, in isolation from the social uses that will take place in them.

Also must be considered are cultural aspects, such as eating cultures, time of use, gender and age dynamics and interactions to make buildings effective. So we need patterns for:

- the physical structure,
- the learning methods, which could be described as *instructional-design theories* (Reigeluth, 1999) with these theories being *application theories* rather than *descriptive theories* (Reigeluth, 1999)),
- learner profiles, such as found with learning theories like Gardner's Theory of Multiple Intelligences (Gardner, 2011), combined with cohort analyses of prior learning skills and or knowledge and or culture and values and or capabilities perhaps better covered by learning theories (Reigeluth, 1999),

- social groupings and the interaction of these, as different groups learn in different ways if teams, partnerships, families or a business as they are purposive and focused on different outcomes, perhaps as emergent properties.

Thus pedagogical patterns for education are needed (Bauer and Baumgartner, 2010b).

Making a simple pattern language that encompasses all of this and the additional social and other building usages is no simple matter. "*The more general you get, the less specific (and arbitrary) it becomes*" (Bauer and Baumgartner, 2010b:1). Rather the best we can do is collect several pattern languages for systematic transformation or recognition in a manual. We might then use the manual to apply them through a co-design process, which would consider all of these patterns in concert. Three main boundaries around a learning building have been identified, which are "*physical learning environments, social learning environments and virtual learning environments*" (Luminen et al., 2015:3).

One way being so inclusive of all the needed aspects in implementing our pattern language is by considering each pattern within our pattern languages as we assemble the whole pattern language. This is most easily done by co-creation, participatory design and design activism. See (Konola, 2014) for a more in depth discussion on participative design methodology, praxis and its ideological underpinnings.

Another way to ensure we cover all the aspects is to look at the origins of learning buildings. Often the primary focus of a building was as a home. I found this was so with many of the indigenous structures I looked at. It was the probable origins of Village Halls from a North European and historical Viking age context too (see mead halls (Pollington, 2010); moot halls and *salr* (Old Norse term: *salr* meaning hall or room) for more on halls (Herschend, 1993, 1998; Brink and Price, 2008); halls as strong centers (Bauer and Baumgartner, 2010b); and their place in society (Bårdseth, 2009)). Here we see what began, as a pattern for a living space, has been adapted to that of an educational, socializing space. Mead halls for feasting have less posts in them, than older precursor buildings, making a greater space for use in more of a public sphere than private sphere (Herschend, 1998) are a case in point.

Small-scale educational spaces can be designed into larger buildings, to service more co-learners. Again individual patterns can be collated of such spaces and then aggregate in a modular way, much as object oriented programming works, or the pods and slices of contemporary school design do. Integration can be in a hybrid mixed approach, in the same way we have a dyad in Lahu culture. Similarly, educational possibilities can be integrated into living spaces. Workers' tenements, that contain book cases and desks in shared spaces for ongoing professional development, exemplify this in Western post-industrial society (Elledge, 2016). In Thailand, we see the collections of 'house plants' found in buildings, which can be used for medicinal, culinary as well as aesthetic reasons revealing such integration. In Hmong communities I saw these plants on verandas, where cooking took place, that functioned as semi-private spaces like living rooms, as well as to a lesser extent inside kitchens.

In the indigenous places, I saw in Thailand, I found several purposes, which have been conflated in the spaces that are used and different focuses by different users on those spaces. I make it more complicated by looking across different ethnic groups, perhaps with individuals that could be said to be in different socio-economic classes and states of educational awareness. Nevertheless, some key aspects that are important for learning can be identified and contrasted with other co-learning space.

The relevant buildings I saw in Thailand consisted of homes (Hmong, Lahu and Karen); the *Nursery and Education Centre* (cf. 4.1.4); and a training location built for agricultural extension and visitor education (cf. 4.1.2). I looked at some traditional building types and saw learning spaces 'mediated and or altered and or developed and or constructed', which allow open learning, namely, home gardens and forest gardens. I looked at some other buildings, the University of Chiang Mai (library, forestry offices) temples (Buddhist only), churches (Christian only). I saw other religious structures (pagan shrines and spirit houses in the kevcai Hmong (Tapp, 1989), and Lahu Nyi religion (Nishimoto, 2003), communities I visited.

Those are single items of material culture, however if we should think beyond just one building. An important element in compiling a pattern language is the property called *boundaries*. Boundaries, is one of the 15 (16) canonical properties of pattern languages that should be considered. The way that the learning environment is not bounded by bricks and mortar, but is a real integral part of the natural environment is a part of a learning building's structure. A soft edge such as a garden or nursery has when grading into a forest is a demonstration of that boundaries property.

Another element is elucidated when thinking on the concept of *wholeness* in relation to the property *strong centers*. While strong centers do occur within a building, they should manifest in other nearby buildings to make a living neighborhood (CES, 2006). So how do we account for those in our pattern language if we want to operationalize it? How do we consider the natural environment, which must form a part of a learning building for NRM? Is the forest part of the pattern language or extrinsic to it? The simple answer to these questions is that we should consider the interaction, but a forest would require its own pattern language. This is especially if it is seen as the learning environment rather than any building (Chang et al., 2003). I would additionally say it is to be discovered rather than constructed. For me the question would become the existential: Does the building shape the forest or the forest shape the building?

Can we construct a pattern language for a place to learn, particularly a place to learn for NRM? I believe that we can. If we take a cradle-to-cradle approach and apply life-cycle thinking, which would include mutability, then such a learning space would involve considering the peripheral areas around a "building" not only the construction methods and materials we would use. These materials would of course vary in minor particulars as the implementation of the respective pattern language varies.

Some education of the constructors and users of the buildings is required for them to understand the concept of the pattern as they are applying it. This is called co-creation (Kerovuori, 2012) and was recognized by Alexander when the implementation of some of his patterns was less than satisfactory (Seamon, 2007). An awareness of process is needed, not only the 15 (16) properties and Alexander calls this "*unfolding*" (Alexander, 2005, 2007). This process has been encapsulated in 10 structure-enhancing actions (Seamon, 2007). These structure-enhancing instructions make a roadmap to a successfully implemented pattern language.

In this research I have used the 15(16) properties along with a pattern writing methodology and some tools to analyse the learning buildings of the Daveyo Bamboo School and the Nursery and Education Centre. While a pattern language cannot be fully written, the approach has helped to disaggregate the locations and explore what made them work on different levels and give lessons for which features are valuable for incorporation in further buildings. The approach has also revealed aspects in the other things studied in the ecology of learning where pattern writing might usefully allow analyses.

As there has been no established pattern writing methodology or tool writing I have constructed this myself and made the judgements myself on if the properties are met and how or if not how they differ from an idealized standard. The availability of several structures allowed analyses to be done with several Thai buildings, Jenifer Casidy's House, a house in Ban Nong Tao, the School and Nursery afore mentioned. However, only the results of the latter two are included in the thesis.

3.3 Artistic Research Methods: a geography of walking another path

A community of practitioners

The Artistic Research Methods paradigm which I have followed in this research is not something that I just invented by myself as a paradigm. It draws on my experiences, traditions and various experiences, which can be contrasted with my personal learning history in the sciences. Others may follow this ARM paradigm, but will have different personal experiences and backgrounds or may purpose it differently. Thus, there is a milieu or a community of practitioners, only some of whom have written texts on their views (Hannula et al., 2005; Haseman, 2006; Rolling, 2010; Leavy, 2015), which can be recognized and described, though this is a matter for another work than this thesis. Of particular note is the Finnish Bioart Society, which was founded at Kilpisjärvi Biological Station in Lapland (Beloff et al., 2013). From that community of practice, the individual practices can be aggregated and generalizations drawn to say what are artistic research methods (or as an approach, a methodology without an attached perspective which a paradigm includes). As of now that has not been done in a satisfactory way. The principal reasons for this are that:

There is an emerging field and discourse around ARM. This means there is a lack of clarity as to what is being considered and a lack of clear boundaries has inhibited clear and succinct descriptions. System boundaries have varied according to the perspectives of artists and those that study the arts so that no consensus has been able to form. To many scientists thus *artistic research* looks crook, as if it has not been done properly or consistently. It can be characterized as children's attempts to do science and to miss out or get wrong fundamental aspects. Artists are not helpful in this respect either, with some presenting artistic research as what they do, just because they are artists. Confusing the act with the actor.

Artistic research can be methodical, and responsive and crucially for us emotionally aware. Science aims for rightness as the closeness to the truth of reality, whereas art may aim for rightness as closeness to the truth of feeling (Alexander, 1987; Fineman, 2000). A very different desire. Although many artists do have mental imbalances such as creative bipolar thinking, this does not mean the approach has to be inconsistent and self-contradictory. Although at times there is a deliberate argumentative contrariness and mis- or partial- understanding encouraged to generate ideas, as with the writer William S. Boroughs use of the cut-up technique (Burroughs and Gysin, 1978). Even though juxtaposition of apparently opposing evidence may occur, the juxtaposition itself reveals truths, which would not be visible without the contrast. Good arguments are warranted by good evidence that is complete enough to contextualize outliers, which can only be done if they can be seen too, and draw balanced conclusions.

Arts have not been traditionally viewed through an academic lens equivalent to the sciences, so while a higher level of expertise exists, there has and remains some contention as to whether it makes any sense to have a PhD or even DSc level of arts. I think it does, but some argue it does not (Wilson, 2013b). Without these higher levels, defining a discipline and working in that narrower, but clearly delimited way, which sciences have developed, from natural philosophy and alchemy over the last century within academia is found missing in the arts practices. This makes it challenging to explain to scientific academics in frames of reference that they are familiar with, as holistic direct equivalencies are absent.

Sciences take their methodology and authority from academia and develop mostly within the university system. Arts also take authority from and continue to develop to a great extent, perhaps predominantly outside of academia. The contrast is akin to that between the academy and the agora of ancient Greece concerning where learning could take place and associative cultural aspects around that learning. Amateur naturalists historically played a much greater and independent rôle in developing science than they do now. Artists and ARM practitioners are our contemporary equivalent of these 18th and 19th century amateur naturalists. Commonly professional artists disseminate their ideas and thoughts through:

art exhibitions, which increasingly are participative with associated artist led workshops. The closest science equivalent is a scientific lecture or lecture series and not a scientific workshop. In science a workshop is usually to crystalize knowledge from experts, in art a workshop is usually a way that an artist can present what they find interesting to those not so connected, though of course formats can vary with both;

artistic residencies, rather than sabbaticals or fellowships as found in science;

festivals, which may be unconferences (Budd et al., 2015; Carpenter, 2015), which eschew many of the standard conference protocols in favour of attendee controlled curation, programing and functioning, rather than scientific congresses;

manifestoes, rather than a seminal paper, a manifesto, which may take various forms, but commonly is a short written polemical text, with articles such as a legal proclamation might display, should be looked at to see developments;

artist statements, which are not a résumé of a given artist or collective's work, nor a list of methods employed, though often these are included in a statement. Rather it is a statement of the philosophy behind their work, methodology in their art, and what they hope to achieve from it;

the *internet* and other *New Media Art* is a more recent development, which allows visual media to carry artists' perspectives much further. Aided by this dissemination, academia has begun to connect artists under a variety of labels to exchange ideas and develop artistic research as a part of a platform (Wilson, 2013a);

platforms which are interdisciplinary fora, which commonly contains meetings and other activities. For example, *Pixelache Helsinki*, which is connected to Pixelversity describes itself as "*a transdisciplinary platform for emerging art, design, research and activism*". It has a wide remit which includes "*experimental interaction and electronics, code-based art and culture, grassroot organising & networks, renewable energy production/use, participatory art, open-source cultures, bioarts and art-science culture, alternative economy cultures, politics and economics of media/technology, audiovisual culture, media literacy & ecology and engaging*

environmental issues." In turn, Pixelache connects to "*an international network of electronic arts festivals. Members of the Pixelache Network are Access Space (Sheffield), Mal au Pixel (Paris), Pixelvärk (Stockholm), Piksel (Bergen), Pikslaverk (Reykjavik), Pixelazo (Colombia), Afropixel (Dakar) and PixelIST (Istanbul)*" (Paterson, 2016:1).

Just as society moves to everyone being literate, which means able to read and write texts, then consequently finding illiterate knowledgeable people is harder and harder. A similar trend can be seen with art. Illiterate knowledgeables do exist in, the indigenous communities which have lower collective levels of literacy than mainstream globalized cultures. Some of these communities, like the Hmong culture, have "*an oral culture where all knowledge is shared by word of mouth, where history is carried through storytelling and legend*" (Siegel and Conquergood, 1996). Practitioners of ARM are to be increasingly found with academic qualifications and have undergone training as artists as professionals. These experiences affect their practices, methods and philosophies.

Sciencing the arts

Arts have been used in mathematics (Dacey and Donovan, 2013) and all the sciences to some degree. Artistic methods can yield useful research outcomes in a scientific context:

situationist approaches can be applied with *dérive* and *psychogeographic walks*. "*Amongst the diverse situationist processes dérive is defined as a technique of rapid passage through various ambiances. The concept of dérive is inseparably linked to the recognition of effects of a psychogeographic nature, and the affirmation of a playful-constructive behaviour, within which it opposes all the classical notions of a journey or promenade*" (Debord, 1956);

I subsume them under the term *artistic research methods (ARM)*. Whichever term is used, the data still has to be analysed, winnowed and processed after collection. It still needs turning into something useful.

So artistic research methods (ARM) to me seem useful to include in my research approach in trying to understand the reality I am exploring in this thesis. I see ARM as a *paradigm* and not only a *methodology.* This view of ARM being a paradigm is based on the reasoning that *the scientific paradigm* leads to *the scientific method, methodology, and method of enquiry* and thence *scientific application via engineering and technology*. We can look within the social sphere to see how education manifests the insights from educational research and social science as educational technology. There is are paradigms at work in this interactive social system In a similar way, we can trace back by analogy that artistic research must be based on a paradigm that I am calling an *artistic research methods paradigm*.

Thus an ARM paradigm that is very much individual and meets the sentiment of artistic research is what I have developed. The questions raised here have been explored and answered somewhat in the exploration of Artistic Research in regard to doctorates in the SHARE: Handbook for Artistic Research Education (Wilson, 2013c) and much of the ARM produced by artists has been recorded in a catalog and database of their works which is connected to the Journal of Artistic Research. I direct the reader to these places for more details.

However, I caution that the ARM paradigm and methods I learnt and apply cannot be simply traced as derived from those sources. Very much I and they are working in the same cultural milieu and independently we may have the same or similar techniques and approaches. Investigations are needed, to trace back the genealogies in subcultural terms of these practices,

to give definitive answers about their origins. Such a hagiographic history of art is currently wanting. We are only at the beginnings of codification and agreement around ARM and ARM paradigms or the ARM paradigm.

3.4 Choice of research methodology

A performative choice

The context in which I was to work, that of a human social system that I was only partially familiar with, shaped the research methods employed. The subjects I would work with could be illiterate non-English speakers so formal structured methods, planned in exact detail seemed unrealistic, and could *not be adopted a priori*. I wanted to take an *exploratory approach*, to the topic of learning within *social sciences*. So, I deliberately avoided limiting, where or how investigations might proceed. The overall methodology followed that of the *ARM paradigm*. I would use *pattern languages* from design science for some of the analysis and post research processing.

When I began the research, I followed the professional practice of a *performance artist*, whereby during the research clarity is gained over the research topic. Methods are adapted and adopted in a flexible way, as tools from a toolbox as they seem appropriate, to accrue interesting and relevant insights. Thus, *experiential learning* is built into the ARM methodology. As every context, situation and even individual is different from the last occurrence, the details will vary though the same broad approach can be applied. This accords with Conquergood's *co-performative witnessing* (Conquergood and Johnson, 2013), whereby I am performing while observing. A nuanced form of participant observation describes it well.

There is one crucial difference from conventional participant observation. That is science works on the basis of the *dispassionate observer*. This observer may be a participant observer or even an observant participant, but they should maintain a neutrality and critical distance for the scientific method. Rather the artistic method can be personally transformative and require a practical action to be taken and employed in carrying out the method. Undoubtedly, there are scientists who have done similar things within action research and action-based research, but in this case I was inspired by the performative arts (Haseman, 2006) rather than a tradition from action based science.

For my research, this is what I wanted to do. I wanted to experience the learning as a learner might do that. This meant employing methods that would be personally transformative, or if not personally transformative, where I could envision them and their effects as close to reality and authenticity as possible. This is akin to *re-enactment*, (Carlson, 2014; O'Neil, 2016), which I and others have used in an authentic location for living history research purposes (Deller, 2003) or *method acting* (Moore et al., 1984; Merlin, 2007). I do not have to be an indigenous person, to appreciate the learning I would get from going on a forest walk, as an indigenous person would carry out such a walk. I can learn in the Lahu farmer's education building, by hearing a talk in that building, then contrasting it with a talk I have heard in a lecture hall in Europe. I can experience what it is like to be talked with; in an exploratory context, in the Lazy Man School and contrast it with the Socratic dialogue I have experienced when at BOKU.

By documenting, what effect the method has on me, and recording how the learning felt, I am carrying out an artistic process. It is an artistic method, even if journaling is an established part of ethnographic research. The holding of planned, focused conversations with an invited audience to create a specific juxtaposition of views, interactions and hoped for outcomes is an

artistic method that has been used in connection with performance art. The recorded conversations around a topic, combined with an iterative process of juxtaposition and interaction of these methods facilitated a written thesis as a product (Das, 2015). I took part in such a methodology with Suvadeep Das in Finland. This kind of focus group method, can be described as falling within "*community-based participatory approaches* … [which aim] … *to involve those who will use the results of focus group research (typically community members) in the design and conduct of the group and the dissemination of the study results*" (Hennink, 2013). "*The participatory approach is often used in community development research; community needs assessment; and behavior change research, whereby the community itself has identified desired changes and wished to use the focus group to discuss the barriers or strategies to achieving these changes*"(Hennink, 2013).

Das (Das, 2015) not only produced a written thesis, but had artistic outputs such as performances, visual arts and meme development, where narratives and stories were developed within an oral culture of practitioners too. Das' ARM methodology went beyond simple focus groups, or co-performative witnessing to have an educative, building embodied knowledge into the community of practitioners aspect to it. There was personal on-going professional development, for himself and the other community artists and performance artists who were participating in the group. The focus group discussion participants were incorporated into some performance art as collaborative action-based research.

It would be possible to evaluate scientifically, what effect the product of my research had on an observer. Were they engaged and motivated? Did they reminisce or were brought into the moment or change their perspective upon reading what I presented? This artistic skill can be used as part of the ARM methodology. Just as we have co-learning as distinct from learner and teacher, so we have the aspect of conflating the experience of my writing with audiences of my work. Such a co-creative process better represents reality.

The time I had to research was very short. *Anthropological* or *ethnographic* work commonly takes a year for meaningful results, yet I had three months. And partly my focus was on developing the ARM paradigm and putting into praxis an unpolished methodology. Having a confidence in and awareness of my level of professional capabilities led me to focus on certain aspects and tools more than others.

While I did do some reading around on methodology (Ritchie and Lewis, 2003; Yin, 2009; Firth-Cousins Jenny, 2012; Miles et al., 2013) and took some courses that included *questionnaire design* and *surveying*, I found that the methods so employed were quite restrictive and not suitable to be easily and directly applied where I would research. Likewise *conventional participant observation*, *participatory rural appraisal* and *workshops with community mapping* were all nice ideas, but required social structures and commitments from the populations I wanted to work with that were not readily available. I made some efforts in this direction, but found them unrealizable. For example, I had hoped to be able to run a knowledge talkoot (Finnish term: *tietotalkoot*)[8] (Botero and Saad-Sulonen, 2013) in Thailand, after I had organized one at BOKU.

I needed sufficient experience in any tool to use it properly. Trust, commitment, payment for cooperation with the research and language were barriers that made some less practical alternatives. I was wary any technique, ostensibly used to support the observation strand of

[8] Talkoot is a Finnish word for a gathering of people in a community of interest to work collectively at a task often for the commons, where food, but not payment is required.

science, would be a form of experiment. This *experiment-cum-observational technique* might alter the reality or bias the data collection in a way that could result in misleading conclusions. A variety of *micro-situations* might be more effective in the same way that *micro-learning* works by avoiding the restrictive nature of too fixed a structure. This idea of short time actions was influenced by performance art.

Upon contrasting performance art with drama, the compressed moments of performance art are engineered, and in a research context can generate data. A practical illustration of this would be for someone to do a re-enactment of how they harvest a crop with the suitable tool as a mime. Absence of structure and rigid framework does not mean absence of methodology, and elements of investigation can still be applied. I was mindful of ethics in my research, not to disrupt the social structures I came across

Which ethnographic approach?

When I mentioned what I wanted to do many counselled an ethnographic, and an *empirical approach*. These terms were not explained so I had to speculate over the semantic field and connotations that they imported with their use. Due to a variety of uses it was not clear to me. Ethnography at its most simple is to "*go and see*" (Wolcott, 2008). It may be expanded to, "*to describe what the people in some particular place and status ordinarily do, and the meanings they ascribe to what they do, under ordinary or particular circumstances, presenting that description in a manner that draws attention to the regularities that implicate the cultural process*" (Wolcott, 2008).

These are descriptions, which are reduced and omit many other aspects that may be included in the term ethnography. In the 19th and early 20th century, ethnography was conceived as related to anthropology and it was a description of non-literate peoples by a literate person, a researcher or perhaps a missionary commonly coming from a Westernized Christian background. It was more focused on an I perspective, rather than a we perspective, and othered the population studied. That legacy haunts older sources.

Later on we have included cultural institutions and not just the people; taken varied perspectives, the *post-modern*, the *integral*, the *developmental, the neocolonial*; extended ethnographic research from a methodology into being a philosophy with its own cultural perspective; made ethnography a view of or about the self- rather than of the other; and brought other philosophies into individual's ethnographic research praxis. So I was confused to say the least as to which approach I should adopt.

Personally, I desired not to read and study one approach and thus shut down an open enquiring mind to other possibilities that might arise. I wanted to do ethnography with a tabula rasa. I wanted a *naïve approach* as is found with naïve art, where sophisticated techniques are eschewed in favor of simplicity. I did not want a pig ignorant one of deliberately ignoring wise council and taking contrary or apparently stupid directions on purpose, which could be a third approach to exploring and thus discovering my own truths.

I hoped that I would be able to gain the practical experience while doing ethnography as a participant observer. I journaled to record my thoughts, through this process clarity and connections would arise. I have seen this is so with Steve Thompson's Octorama (Thompson, 2010; Smith, 2012; Nedelcu, 2013), Suvadeep Das's journaling approach (Das 2014, pers. comm., #31) and others that have been very possessive about their academic journaling, even

perhaps separating their writings into a cleaned official journal and a messy mix of thoughts more akin to James Joyce's Ulysses (Malinowski, 1989).

This process led me to favor a "*thick description*", in approach and presentation (Ponterotto, 2006). This means a *cross-cultural comparative approach*. I have become less attached to the skeleton of repetitive questionnaires asked to many respondents to *cross-validate* responses and give a *pseudo-strengthening*. If you ask, 1000 people or 100 or 10 people the same question and they have learnt from the same source they will commonly give the same answer and this does not strengthen the veracity of that answer.

An example touched my own research. Much of anthropology has relied on the concept of local knowledge, the idea that in a remote area intangible cultural heritage can be found which is more original than away from those areas. In the case of the Lahu people in China, they profess a strong belief that their origins are from a certain region of Asia, yet investigations have revealed that the idea of this is not backed up by the evidence (Jianxiong, 2009). Instead, the belief has been constructed by the state, and the people have come to believe it and repeat it erroneously believing it is ancient, local knowledge. Relying on oral testimony from such an oral people is not wise. Similarly, speculation about the spirit tree and spirit forest practices in a rites based approach would find some claiming they were traditional practices rather than practices, which are culturally appropriate, adopted and adapted into a tradition.

I hoped to avoid making errors of judgement by triangulation, from expert witnesses, different generational information, textual sources and observation. Ultimately, it was not so important to say if a practice was from this culture or that, just to identify that it was present. The Thai earth-building movement is not a traditional Karen practice, but it is happening in Karen society and being adapted for a more sustainable form of architecture than the heavy mahogany logs of traditional housing. That is being taught in a Karen appropriate technology situation in the Lazy Man School and thereby serves the purpose of controlling wood over exploitation is the significant finding.

I was disposed to an approach, which I termed *artistic research methods* that could be used with *case study research* where two or three significant cases are investigated in depth from multiple facets, which cross-confirm each other. This would be *exploratory research* as it was an open approach that was needed due to the uncertainty I faced in Thailand. To my understanding, the ARM could be used in an exploratory research context and in a context that is not exploratory. To my understanding, exploratory research is used where there is not a clarity over a research area, it is poorly delimited, or deliberately kept broad by design (Stebbins, 2001; van Bruggen, 2001).

I wanted to do exploratory research, as I wanted to keep it broad, as I was not so familiar with which interesting elements of learning or related phenomena I might come across. Yet the exploration of those elements could be done via ARM. For example, I had a foraging background and so expected to find some kind of foraging practices that I could report on. Yet I did not know that there would be Hmong Forest Walks and that I could go on such a walk and have the praxis demonstrated and explained to me. Going on the walk and learning foraging by doing it was the kind of experiential learning I wanted and I saw as an artistic research method. Me not knowing if I would find such a walk or how I might interact with it as an observer, participant observer, or just hearing tell about it in an interview was the exploratory research approach I took.

3.5 Anonymity or proper recognition

When engaged in social science research the aim is to get accurate data from a human social system. After the data is taken it is commonly processed and reported on. At the point of reporting, various options can be taken in regard to the original informants, translators and other research assistants.

Any of those people may have their own agendas and interpretations on the data so gathered. As this may sway a researcher with fear or favor the common practice to acknowledge these people and their contribution abstractly or by keeping them anonymous. This can be done by acknowledging an institute, geographical location or larger group. This often leads to a reputational deficit.

There are moves to rectify this representational deficit and thus empower the excluded with what is called decolonizing research methodologies (Goduka, 2014). But it is one thing to have an aspiration and awareness about minority discourse (JanMohamed and Lloyd, 1990) and such praxis and another to build it into praxis, especially as a student with time pressures to gain the core data for a research investigation, who will get little to no credit for doing this. Why bother, even if it is good practice, if you can choose not to do it and hide laziness behind the excuse of ethical anonymity? I am of course being rhetorical there are good reasons why I think you should and have done this appropriately.

Some disciplines like ethnography or anthropology will perhaps find time to include education around the issues to sufficient depth, but for courses with a more engineering approach they traditionally lacked such ethics in their curricula or were voluntary, although that now changes (Brown et al., 2009). For myself I think there are good reasons for not cutting corners and for taking a thought out position. Integrity is important for future work as a scientist or practitioner. You can put others and yourself in danger if careless over the ethics. Working in natural resource management this may not be obvious, but you make can create a culture of trust or a culture of suspicion.

Using “pers. comm.” does allow the possibility of crediting informants for an insight, which I have done in this thesis. I have not given a name, but merely an informant profile, which can be seen in Appx. VI when the informant requested that; or I am aware of a vulnerability, which puts them at risk of harm in what they have told me. In this research I have followed the practice of Das (Das, 2015) while doing the research and after when writing-up have asked those that aided me if they want to be credited. In most cases, they do not.

3.6 Surveying

For my research, I considered various ways to get data from the people I would encounter. Ideally, I would have liked group settings, perhaps using focus groups or groups that were engaged in a purpose like strategic planning or some aspect of collaborative action-based research. However, it became apparent rather quickly that this would be difficult to achieve due to language limitations, cultural and trust issues. I am used to working in quickly set-up ad hoc groups to develop a project with people I have never met before from a wide variety of backgrounds. It appears that most of those I met were not so used to doing this.

Instead, I thought to do questionnaires. These could have been structured questionnaires or polls; I rejected these as a principle approach as my experience with them is that they are restrictive and limiting. They are prone to poor design, even after testing, and often have leading questions that reinforce confirmation bias. I was troubled by the possibility in exploratory research that I would be directing people to indicate what I hoped to find instead of organically discovering it. I feared that they would not permit ARM to be effectively practiced nor developed.

However, absence of structure can be effective. We can see that with learning which is often without structure, for example in some experimental schools and the natural way that home schooling tends to move. This idea has merit, but requires some time to be effective. Instead I decided semi-structured interviewing would help to frame and make sure some crucial areas were covered. I could omit questions or supplement them as needed.

When I did interviews in Thailand I recorded the interviews on my laptop and later processed them with the program Listen N Write (softonic, 2014). When I used Skype, an internet telephony program (Janghorban et al., 2014), for interviews in Austria I tried to use various free recording programs, they were not successful so I do not mention them here. The last interview I did I used a recording device and had a technician to help me do the recording. Appx. V is a crib sheet from my research in Thailand.

I considered using an internet based surveying method. I had seen quite a lot of these and had noticed such questionnaires could reach a large number of people and get rapid responses. I had also done a Delphi study (Murry Jr and Hammons, 1995), and was prepared to be more in depth if the opportunity was there. if dirty data. I was skeptical about this working *in my case* for several reasons. I was not sure if there was an email literate and email using population that I could reach. Language barriers made me wonder who I would reach and how useful it would be if I reached anyone.

Nevertheless, I made some very basic questions and joined some appropriate Facebook groups where I might reach interested and social media literate people. There were English speakers in Thailand from the ethnicities I wanted to research with. With that aim, I wrote some short texts of a very general nature to see if anyone was supportive of my research efforts.

The results were underwhelming. Despite many people being signed up to the websites and the groups, I got no information and no replies of any use. I tried to use *snowball sampling* (Goodman, 1961) via email too and ask some more specific questions to those on the groups, but got no response at all.

Most fortunately, I met with several people who connected me to other useful contacts who I could meet with personally. In addition to the conversations I had in the villages where I stayed, I was able to arrange some small group meetings. There was a gathering in Ban Mae Sa Mai, another in Doi Mot and I met a group in Khun Wang. I also went on a road trip to Ban Nong Tao where I was able to talk with several villagers collectively. I arranged individual interviews in Ban Mae Sa Mai, Khun Wang and had an long road trip from Doi Mot and was able to ask questions on that trip. I organized several interviews in Chiang Mai. Once back in Austria I did several skype interviews and one visit.

Although I had not been able to use the internet effectively while in Thailand, once not in Thailand I was able to ask several people follow on questions to clarify aspects touching on my

research. Most useful rather than the interviews were the conversations, which I was able to focus on my topic over short periods. Rather than an hour-long interview, I was able to find out information by conversations of 10-15 minutes. In total, I had about 10 meaningful interviews. I transcribed the interviews and used the text output for analysis. Where possible I sent a copy of the interview for copy approval, but only one person replied to this with comments.

I analysed the interviews on the basis of the learning ecology that I could see from an overview of the data. As the data was varied and included interview transcripts, videos, ephemera, photographs, email chats and my research journal notes I thought to use some database software for mixed method analysis, namely *Atlas.ti* or *MAXQDA* (Franzosi et al., 2013), to assist with the process. However, as I started to read around the subject and to organize my data for entering within the software, connections and narrative emerged anyway and the software did not prove so useful. The most useful thing was the free tips for research from the software companies and newsletters. I also found that a pattern language approach meant some of my focus was on creating new tools for carrying that out and I was able to organize the data in that way as part of a repository of photographs and associated information on a visual rather than textual basis.

3.7 Photography

Here I discuss both why photography is useful for research and the technical aspects. Such a coverage of the why and how can be seen in professional textbooks on photography (Kobré, 2016). I provide this to help any other researcher develop a trouble shooting approach in accordance with the way the photographic community works.

Some of the problems I faced could be described as, "the common tourist problem", which are not expounded upon here, and others are more "research specific problems", of a kind pertinent to this research.

Technical considerations

Getting candid shots is always difficult as seeking consent for images takes time, often alters the image if done before and on many occasions would not be possible. There is the question of who can consent. Can children consent? Non-English speakers may find it difficult to say no. Sociolinguistic awareness of others' differences was relevant to me as an English speaker and user of English communication both verbal and non-verbal. I needed to be aware that they may not share a common understanding of my communications. Some people are not aware of what could happen to the images so cannot give informed consent to what they do not comprehend. People in some cases are culturally predisposed to consent, because a no is considered rude, but an emphatic yes should be sought out.

In my case I found people were happy to be photographed and if asked later if they wanted to be public in a publication they often declined. However, there were no objections to me taking photographs of objects or general group shots and using those.

I met others that were taking pictures and using them professionally. Most useful of these was Jeffrey Warner, who allowed me to make use of some of his images and provided me with some research information (Warner, 2014).

I was able to use others' still images and videos, which they captured when they were with me in the study locations. While others may have taken the still or video images, I asked them to record some of the images for me. After my preliminary research in Thailand, I had a series of

locations and people that were of interest to the research. I then did a search using the internet on those topics and individuals. I had collected some audio-visual material while in Thailand and to this I added further relevant material. Much of this was available on social media and I used a program called YouTube Downloader (http://youtubedownloader.com/) (Watkins and Wilkins, 2011) to archive copies of that material for research purposes. Often there is not a wide distribution to the material, and some of it was of low artistic merit, but nevertheless useful for my research. Where possible that material is referenced in the thesis with the distributor or preferably a Uniform Resource Locator (URL).

Difficulties remain with content sourced from others, the copyright of the images, rests with the photographer. A verbal agreement that you can use the pictures is less powerful than a signed release document. Permission to use can be given by virtue of having the images sent or shared in an email that expressly confirms this, which is what I have done. Consent may not be there from subjects of photography, even if the photographer is happy for you to have the images, if the consent was not given without restrictions. Implied consent is sufficient for purposes of research, though not necessarily for publication. Professional documentary photographers and filmmakers could not just be expected to allow free use of their pictures as this would be taking away from their livelihoods. The law is complicated and variable in different places, as the case of the Techno-Viking reveals (Specht, 2014), so care and consideration is advisable.

In my case I avoided images which I felt could compromise the person in them, for example a picture of someone setting a fire in a national park. Images that I saw which could be good, but are clearly someone else's work for their livelihood have not been used in the thesis. I wrote to some people and used what they allowed me to. As I have a low budget I have not bought any pictures and I acknowledge the copyrights in the text according to law and the person's wishes.

Suitability for research

Photography can be used for several purposes (Smith et al., 2004). In principal my aim was documentary photography (Editors of Time-Life Books, 1972). By this, I mean I wanted to document what I saw for later analysis and as a record for an archive. The images to be later used for lectures, posters or in websites. All of which happened. I did not have the aim to use the images for social advocacy (Bogre, 2012) and I wanted to avoid posed or staged arrangements with the images I took. I wanted to record authenticity. I hoped that I could take the approach of an auteur working with DOGME 95 principles (Danish term: *dogme* meaning dogma) (von Trier and Vinterberg, 2005) which aims to have the minimum alteration from reality as possible. I took minimalist approaches like this to acquire a more authentic representation and so on analysis a better-derived explanation of what is happening.

As my aim was some collaborative action-based research then some of the video material was edited and made into a film (by me) that has been more widely shared via the Human Dignity and Humiliation Studies network (Lindner, 2012). Others in that network shared some images and videos they took and these are referenced where used.

So once I had my film and stills photographic material, how did I use it? I watched the films and took still images of significant objects of material culture. These were then analysed as proxies for that artifact. I had planned one other use of photography. I took a laptop to show some typical domestic scenes in Europe: a family Christmas in Finland; my parents wearing traditional Morris dancing black-face and costumes; some people berry picking; my family and

other pictures of myself in various contexts I planned to use them as aids to get people talking and discussing situations in their own country.

I found at times it was useful, and more women than men asked about my family and were interested in seeing the pictures. This did give some information as a technique, but needs more development and curation of images in order for them to be meaningful and useful in the context of gaining anything from learning. Images were also useful as a digital herbarium or to talk about things that had happened recently with shared meaning allowing incidents to be explored in more depth on a separate occasion.

3.8 Material culture

"*Material culture records human intrusion in the environment. It is the way we imagine a distinction between nature and culture, and then rebuild nature to our own desire, by shaping, reshaping, and arranging things during our lifetimes*" (Glassie, 1999). Everywhere I would go I would be surrounded by so much material culture I would have to focus on what to collect. I collected only small portable items which were not restricted due to being antiquities or culturally restricted, although I did attempt to collect one spirit guard, I asked rather than just took it.

Material culture can be summed up as things, all kinds of things, portable objects or artifacts and ephemera. Ephemera are things for short-term use and are usually paper items. I collected leaflets and brochures from natural resource related public information. So these were promoting ecotourism or marketing forest products. Things get tricky when we consider the digital world as emails, phone calls and videos (Doster, 2016) which are ephemeral things too, but may not be considered as material culture, although that is somewhat illogical. Often this *digital ephemera* start to fall into the remit of intangible heritage (Smith and Akagawa, 2008). Here I collected screen grabs, of which there is one in the thesis and saved all my emails. There was little of use for this research other than the content.

When someone dies, what they leave behind them is called Nachlaße (Geman term: *Nachlass* meaning after leaving) and these are things with a collective aspect to them. All of these things have a relational aspect to people and communities and perhaps each other. Those things, the things themselves and the relationships between them can fall within the intangible heritage category. I did not have any such items, although I did see photographs that were used by the communities I visited and items in temples, which would fall into the category of Nachlaße, they were not relevant to my research. At least two people that are pertinent to my research have died since I began, so some related Nachlaße exists.

Larger things such as houses and landscapes or gardens are important, but as non-portable are not considered often under a schemata of material culture (Rapoport, 1982). Often they are considered within the built environment (Pearson and Richards, 2003) or at the landscape level, though a case can be made that when landscaped something such as a park or garden it is material culture (Rapoport, 1982; Hicks and Beaudry, 2010). Here I did investigate these things, from a garden design perspective.

The particular crops that may be selected for an agroforestry system and fruit trees are often not considered as a part of material culture, although trees and timber have been so investigated (Bintley, 2013). Natural, albeit influenced by man plants, animals or biological systems such as particular soil types are not considered material culture. However, with a characteristic academic land grabbing approach, scholars of material culture studies extend beyond simple

descriptions to the wider field of use and cultural settings (Hicks and Beaudry, 2010). It must be stressed that material culture does not just mean something material, as "*material culture in itself means nothing until it is situated in a regime of interpretation*" (Pearson and Richards, 2003). There is what is known as "*the "material turn" in the social sciences*" (Hicks, 2010; Islam, 2016), which is visible as a discourse about things and their agency and value in interpretation of culture. The varied interpretations and perspectives are not yet coalesced into a clearly accepted framing and terminology so I do not propose to go into the details here, instead I refer the reader to (Frow, 2013; Joyce, 2013) and especially (Hicks, 2010).

In my case, my focus was to consider if I saw things that were related to specific use cases, so interpretation with evidence. I looked out for tools, but I also needed to try to capture the non-material cultural aspects of the tools. So the particular type of tool that I would see in Thailand would be perhaps made by blacksmiths in the cultures I visited rather than a mass produced commercial approximation, which was more generic. The actual usage of such a tool, or a basket rather than just the presence on a wall was crucial. I was able to see this to some extent.

4 Results

The first results are grouped by *material culture* of buildings and cultivated areas. These share a commonality of landscape, I only hint at their interconnections rather than make them explicit. I believe they are there through ideas like the biocultural landscape and pattern language research with the concept of strong centers and the ripples and links that come from them, but exploring them to the extent of firmly saying how they are present with a high degree of confidence would require more data.

The next grouping is *sources of learning*, where knowledge and wisdom may come from. By the nature of knowledge there are gaps, in what I found compared with what is there. I think individuals will vary a lot in where they get the knowledge, and this is borne out by the research findings, though without large survey numbers clarifying how the split varies over life-stages, educational level or other factors is not explored nor given in detail.

The third grouping is based on what I call *learning fora*. By a learning forum, I mean a space created specifically for learning. It is not a physical space, like a plaza or that could be described as material culture like a building. It is a conceptual space where actions and institutional behavior is expected which can lead to learning.

In my taxonomy, learning fora are distinct from the *technique that is employed for learning*, which I make a fourth grouping to cover. Learning techniques are specific practices engaged in by a learner in order to learn. They include specific teaching techniques employed by a pedagogue, as by their operational purpose teaching techniques are aimed at facilitating learning in learners. These can be called teaching or learning methods. I do not use the term methods as in the literature it seems there is some confusion of use with methods being used to; designate themes in which a technique can be applied (Björklund and Ahlskog-Björkman, 2017; Monbiot, 2017); teaching tips (TCTL, 2014). It is even used as a synonym for methodology, for example talking about a constructivist method, when a method employing a social or personal constructivist methodology is actually meant (Baviskar et al., 2009). The term "*educational tool*" is also found to describe learning techniques (Baviskar et al., 2009).

A way to understand my grouping is to talk about a person learning in a library. The physical building with books in it would be the first material culture grouping; the source of knowledge

would be the artifacts in the library, which would be books, DVDs etc.; the learning forum could be a reading circle and the fourth grouping of technique would be reading aloud and discussing the books with other participants.

In some cases, splitting these is difficult, for example, a religious ritual could be described as a learning forum and a learning technique. Another is when we talk about going to school and the building is the school and used in English as the source of learning. Thus, the results show a variety of these aspects and I try to avoid redundancy of explanation where I can by focusing on the significant aspect in the respective section.

4.1 Material culture of buildings and cultivated areas

4.1.1 The Thai earth building movement

When I visited Ban Nong Tao, I saw some buildings being constructed out of earth materials by the Karen people in the Lazy Man School. They appeared to demonstrate evidence of co-creation and unfolding as learned behavior manifesting in building design. Traditional Karen buildings would be constructed of wood. That approach was known to the builders of the homes I saw. However, they were using some, new to them, earth building techniques. There are several earth building-materials and concomitant techniques that can be used (Kennedy, 2009; Snell and Callahan, 2009; Uthaipattrakoon, c2005). In this case, I would describe the building as a cob, combined with mud-brick (adobe) construction. Elsewhere in Northern Thailand, sustainable building techniques are taught in community settings, one of the teachers of such courses P'Thongbai Leknamnarong, owner and creator of Earth Home Thailand (Thai name: Maejo Baandin, in Thai: แม่โจ้บ้านดิน) (EHT, 2012). "*She is not Karen I visited her 2 times*" (Jowalu. 2016, pers. comm., #28) I was told by one of the Karen earth-builders.

It is possible that she was inspired by sustainability techniques from the British Isles where cob houses were traditionally built, and are now seeing more of a revival (Williams, 2006). Films (Sheen, 2009; Wolf, 2009) spread these ideas too. This earth building tradition was being adapted to the cultural location and was not seen as indigenous to that area by my informant, nor the teacher he was acquainted with. This is an important point as often such techniques are branded as 'traditional' or 'timeless', or coming from local knowledge but they are not traditional to every culture and location (Forsyth and Walker, 2008a).

Upon investigating this further, I found that there is an "*earth building movement*" in Thailand (Smith, 2003; Geiger, 2010). While the movement's origins can never be ascribed to only one source, it appears there are two main sources for the current popularization. One is the farmer Jon Jandai from Isan and he is active within Chiang Mai Province at his farm project the *Pun Pun Center for Self Reliance* (Thai term: *Pun Pun* meaning a thousand varieties) (Jandai, 2011, 2015). Isan is the North East area of Thailand where farmers are creating more innovative ideas in terms of alternative more sustainable and cooperative society models than other parts of the country, for example, the *Inpang Community Network* (Vickers et al., 2012; Lindner and Kjell, 2014). It appears that Isan has its own regional culture and language, which is closer to Lao than Central Thai.

This culture is undergoing a resurgence and this could partially explain it as a source of innovation. Though the ideas of the New Theory (Watthana, 2002) are falling on fertile ground and are I think providing institutional support. Jandai went to Bangkok to study at university level. He dropped out, returned to his rural roots (Jandai, 2011) and went to the USA in 1999.

While there on a bike trip he encountered the Taos Pueblo architecture, "*he headed back to Oregon where he was living for a short while and checked out a book from the library on adobe building. He copied the pictures and when he headed home to Thailand began experimenting with adobe construction in his village*" (Geiger, 2010:para 8).

Jandai then went to a cob-building workshop in 2002 where he shared his Thai adapted technique with the participants. There were 2 cob building workshops: NATURAL BUILDING WORKSHOP IN THAILAND Learn Cob Construction, Thatching and More January 11th-20th, 2002 (Kapoor, 2001); and 2ND NATURAL BUILDING WORKSHOP IN THAILAND, Learn Cob, Adobe, Earth Plasters & Bamboo, March 15th-24th, 2002 (Naphtali, 2002). What is important is that the first workshop had been organized by; Michel Spaan, from a seed collecting background at the Dutch NGO, The Court of Eden; and Janell Kapoor from her Kleiwerks International NGO, based in the USA that focuses on natural building techniques. The first training was held in Wongsanit Ashram. In this case the religious connection was tenuous and that ashram is to be seen as "*more an activist training center than a spiritual retreat place*" (Smith, 2003:para 18). Nevertheless, Jandai had been a Buddhist monk in the past and Buddhist culture influenced some of the participants.

So the aim was technology transfer, which was only partially successful. It turned out full cob building was time consuming and not the best for the Thai situation, however when localized and altered by Jandai to include adobe the building project was successful (Geiger, 2010). As a result, the second workshop was altered and more adapted to the conditions of Thailand. Jandai attended this workshop, but as one of the "*instructors*" (Naphtali, 2002). After this many people took these imported ideas and spread them around Thailand via the train the trainer or teach the teacher approach (Schuler et al., 2011).

Jandai says Thailand has some tradition of earthen construction "*but we don't use it for housing, only for grain storage. It's wattle-and-daub style, but normally they use cow dung, not mud*" (Smith, 2003:8). When I was in Suan Lahu, I helped to build an outhouse and shower area connected to a traditionally built Lahu house. That house had been constructed by an anthropologist couple, Jennifer Casidy, who is English and Brandon Casidy, who hails from Australia, to be as authentic as possible using local resources and people. We constructed the outhouse from what I would call wattle-and-mud rather than wattle-and-daub. The difference is that wattle-and-daub to me would be a woven wicker or similar panel with mud stuck on it like a stucco. Wattle-and-mud would have bigger gaps and form more of a skeleton than a base surface. I believe that the wattle-and-mud technique we practiced was a new technique to Thailand, which has been innovated from earthen construction and wattle-and-daub as practiced in Thailand.

There is a longer history of compressed earth blocks (CEBs) being promoted by a government scheme (Geiger, 2010). Further awareness raising has happened through books, for example written by architect Thana "Joe" Uthaipattrakoon (Conley, 2009; Uthaipattrakoon, c2005), television (Geiger, 2010), events such as TEDx (Jandai, 2011), the internet. These have led to the woman teacher that I saw practicing this technique in an online travelogue video of her farm (Nikora, 2016). It seems that she is building using mud brick with cross-over and mixing from other techniques making hybrid techniques (Kennedy, 2001).

My Karen informant was aware of these people, but had gained wisdom and taken ideas from several sources, not only this one. As he is a part of the World Wide Opportunities on Organic Farms (WWOOF) movement (Ord, 2010; Kosnik, 2013) then many visitors from many lands have come by his home and he has talked with them to learn more. As the knowledge within

the earth building movement has grown, it has been spread by some other local actors. In fact, a third sector actor-network helped to lay the conditions that could work to develop such initiatives. That actor network has many strands, which include the *Spirit in Education Movement (SEM),* who work on *sikkha. "Sikkha is a pali word, translated as education or training. Sikkha is further defined by three components, sila (morality), samadhi (concentration), and panna (wisdom). These components are important aspects of education because they encourage authenticity to flourish. Lai is an abbreviated form of mahavittiyalai, which is the Thai word for university, or place of higher learning. Together, both the Thai and English titles illustrate SEM as an organisation working on education grounded in spirituality, which supports people to serve each other and society*" (SEM, 20091).

The Sathirakoses-Nagapradipa Foundation (SNF)

The SNF was "*founded by Ajarn Sulak Sivaraksa in 1968*" is "*guided by a spiritual, environmental, and activist vision*" which is "*the 'mother' foundation for the seven sister organisations that have continued to struggle at the grassroots, national, regional and international levels for human rights, cultural and ecological integrity, and social justice*" (SEM, 2009).

The Santi Asoke สันติอโศก (อะโศก) movement

Santi Asoke is connected with these organizations. Santi means happiness, without sorrow, peaceful in the translations I have seen, but possibly tranquil would be a better translation. Ashoka the Great (Asoke in Thai) was a king that practiced a peaceful way of life which some believe was Buddhism and others not, but that it anyway is similar. Santi Asoke was started by Mr. Rak Rakphongs, now known as Samana Bhodhirak. He was inspired to follow Buddhist precepts closely by the Thai forest tradition, and other Buddhist teachings. His followers do teaching collectively and with a non-monetary existence (Mackenzie, 2007). Although the move to self-reliance and organic farming moves them away from a mendicant existence (Witmer, 2003a).

"*Asok members devote much of their time to sharing their knowledge. After a large economic collapse in Thailand six years ago, communities began hosting seminars on organic agriculture and self-reliance. Eventually, these were even funded by the government*" (Witmer, 2003b). Jandai describes them thus "*They are the best model for self-reliance in Thailand …They don't have an academic thing -- not writing, talking – they just do it. I think that is the best way*" (Witmer, 2003b).

Santi Asoke share Jandai's perspective, as outlined on the philosophy of his farm, stating on its website, "*We believe in learning by doing and that there is not only one way of doing things. We don't believe in experts, but in learning together by sharing our collective experience. We have seen that through opening the door for further exploration, new developments can occur.*" That Pun Pun webpage goes on to say "*We also strive to break-down the structure of experts and students. We feel we are all learning continually everyday. True development comes from taking wisdom and knowledge from others and experimenting ourselves to create improvement. This is all we do. We will share with you what our experience and knowledge we have gained has taught us and we will also experiment together to develop new knowledge together. Our teaching style is strongly focused on hands-on learning. We feel with the skills we are learning it is essential for us to do it ourselves with our own hands in order to gain the confidence to leave the place and take the skills with us. We will also try to balance this with discussion and principles*" (Jandai, 2015).

These all have a strong relationship to Buddhist thinking. However, the earth building movement as developed here is very clearly connected to a non-religious globalization that I call altermondialist globalization (Petz, 2013), and is visible in the large movement of movements (Mertes and Bello, 2004; Negri et al., 2008) which is ecological and social (Hawken, 2007).

In addition to the social milieu of motivated and educated people, in which the earth building movement grew, economic drivers were required too. It is speculated that hardwood, as commonly used in house building, has become too expensive due to deforestation reducing the local supply (Geiger, 2010). Higher international hard wood commodity prices (Barrientos, 2016) and a weakening value of the Baht (Fedec, 2016) over the time of growth in earth building played a factor in making wood for building locally unaffordable. Due to the "*economic collapse*" (Smith, 2003:para 25)of the 1997 Asian financial crisis, more people were in the countryside with time to practice new techniques which "*helped a lot*" (Ibid.:para 25).

Training of young people was happening in the Karen village by my informant, not only production of the building materials, but also aesthetics on building size related to family structure and needs and outside decoration to be beautiful and functional was occurring. So here, we had a pattern language of architecture for housing. A pedagogical pattern could be derived from the construction process too.

4.1.2 Daveyo Bamboo School in a Lahu community

A diversity of tradition

When I began to look at the buildings that were used in community settings, by adults, for NRM I found that buildings principally dedicated to that purpose were uncommon. By in large the buildings made use of for resource management related reasons had been adapted from homes or other uses and were only temporarily used for NRM purposes. In Thailand, and probably much of Zomia, where there are liminal cultures, the dominant juxtaposed cultures will have created the form of buildings and especially learning buildings. So I was delighted to find that there was a purpose built structure, "*an indigenous learning centre*" (Jakhadte Jayo et al., 2011) for natural resource management that had been constructed using Lahu architecture and design.

This building was called the Daveyo Bamboo School (Lahu term: *daveyo* or *da we yu* meaning ciao!) and was erected in Doi Mot under the direction of Jakatae Jayo (Jakatae also uses the spelling Jakhadte) at Suan Lahu. Suan Lahu is a coffee farm in Doi Mot village led by "*co-founding president*" Carina zur Strassen, "*with a background in language education, social anthropology, and development cooperation*" who is not Lahu. She is long studied in the Lahu Sheleh culture and works with the Lahu people in running all aspects of the farm (zur Strassen, 2013). Construction was carried out in accordance with a Lahu cultural building tradition meistered by Suan Lahu co-founder Jakatae.

Jakatae is now no longer directly involved with Suan Lahu, having gained knowledge he decided to start his own business nearby, which he has branded as "*The Da We Yu Hills*" (Da We Yu Hills, 2014). It consists of his home as shown in Figure 4-1, some guest houses shown in Figure 4-2 and a coffee-bar which is in Figure4-1, which are built from bamboo following the traditional architectural style. The coffee-bar was called *Jakatae's* when I visited it, but the

whole complex is now called *Jakatae Farm Life* (Defestano, 2015). I stayed in one of Jakatae Farm Life's guest houses, which were built for tourists, over one night for a low fee, when I walked about 16 km to Doi Mot from the nearest main road.

Figure 4-1: Jakatae Farm Life Coffee-shop and Jakatae's house. Source: Jakatae Farm Life, https://www.youtube.com/watch?v=VQLGymDFP3o&feature=youtu.be Copyright: 2015 Defestano, Luke.

Figure 4-2: Jakatae Farm Life guest houses. Source and Copyright: Ibid.

The arrangement of the buildings is similar to that of the Suan Lahu coffee farm: being spread horizontally along a suitable mountain slope, but the coffee-bar, which Jakatae calls a coffee shop, is reached first and then the guest houses are farther away from it.

While there was an element of action-based research in the Suan Lahu project, others in the village criticized it as a dream of a rich foreign woman making money from indigenous people (Anon. 2014, pers. comm., #32), rather than a Lahu organic development. It can be criticized as moving the Lahu village away from sustainable, more traditional, self-sufficient agriculture and existence towards cash-crops and integration into a capitalist system that is less self-sufficient and more money economy oriented. This view is only partially conscious of the actual situation, where large amounts of chemicals have been inappropriately used in rural Thailand. This impacted older less educated Lahu people who failed to use the gloves, masks and other safety equipment they should have done when handling these chemicals (Pine, 2013). Organic coffee moves away from poisoned people, so is socially good. It moves away from localism, which is bad. There is a subtle shift from forager culture toward farmer culture and thus peasantization too.

Aside from Lahu structures in Thailand, I saw: Hmong structures, and local innovation in building amongst the Karen people I met. While it would be easy to find archetypical examples

that show these people having distinct ethnic house building styles, I think in modern Thailand this is breaking down as all peoples are adopting the Thai housing methods while bringing techniques from other building traditions too. The earth building techniques, more permanent concrete housing, and national government policies do put the traditional styles at risk. As the styles are embedded in the environment with place identity and social patterns it is necessary buildings for public use, like learning centers can retain them.

There is a debate about old buildings and old building styles across the world. On one hand, there is the desire for building conservation, to *conserve* an old building as it is. Preservation measures may just make a construction stable so it does not disintegrate anymore, or done to shield it by cladding with concrete or other materials. Then on the other hand there is the desire to *restore* a building, while this appears at some level to be better - which it can be visually, there is a danger of loss of "*historical evidence*" (ICOMOS, 2008). A restored item is new and loses some of the authenticity of technique, often the restoration can be poor or even damage what remained of an original intangible cultural heritage, such as craftsman guild marks or other symbology. The traces of old tools may be lost and aesthetics may mean a restoration is not as faithful to the original as it should be.

In Thailand with a desire to promote a certain view of history, there is a danger that a temple maybe restored to the way that contemporary restorers think it should have been to reflect their religious views rather than how it was when originally conceived. In short the conservators' and the restorers' ideas do not match (Byrne, 2014). Other dilemmas arise upon considering, hybrid cultures or when over time different uses have been made of a building. Which culture(s), era(s) or purpose(s) should such a building be conserved or restored to?

However, rather than preserving every old looking building or trying to stop time another important aspect to architectural management (Emmitt et al., 2009) is any associated living tradition. A living architectural tradition means that a new building using new techniques can be constructed, but done in a way that is sensitive to the cultural roots of a given tradition. This viewpoint is a more recent attempt to move beyond The Venice Charter, a major document for influencing how conservation and restoration has been approached around the world (ICOMOS, 2008). Unfortunately, it has been used by Modernists to stifle "*traditional design … [and] privileges the voice of transnational class of modernist architects over … those of local people and traditional cultures*" (Hardy, 2008). By respecting collective cultural traditions, an existing path dependency can allow new safety features or ecological elements to be brought into functional buildings, while still connectable with the tangible and intangible heritage of a place. Such debates have happened in Thailand (Baker and Society, 2013) and touch questions of soft power and ethnicity.

A particular case in point is Charoen Chai in Bangkok, which is part of China Town. The question is: If it is China Town does that mean that: Chinese ethnicity, ways of being, and in effect China as an idea is in control and not Thai and Thailand (Luekens, 2013; Sirisrisak, 2015)? Here heritage is not being protected, not only due to neglect and weak enforcement of laws, but also to protect the nation state. While this may seem a trivial distinction, it is akin to the battles fought over gentrification in many cities, where "*the Kulturraum is becoming one of monoculture and lack of diversity rather than multiculturalism*" (Petz, 2011). The cities end up homogenized and lose their distinctive flavors and histories through deliberate policy design rather than accidental side-effects. When the "*Lumpenbourgeoisie*" (Petz, 2011) mentality of homogenization extends from Bangkok into policy application in rural areas, the traditional building forms are denigrated and disappear, despite their perhaps better suitability to the environment they were built in.

Thailand does have some built heritage protection laws, legal building codes, and support for traditional crafts. There has been royal support for these things, and so awareness is present, though when walking around Chiang Mai it was obvious to me that the city is not kept as beautiful as it might be. Road transport and the effects of not having a good policy framework to deal with its increase have worsened the situation so that a "*walking street*" is talked about as an exception to the ubiquitous motor cycles, tuk-tuks and other vehicles which have driven people from tarrying between destinations.

A purpose built learning building for natural resource management

In the villages this is not the situation by in large, and in the case of Suan Lahu the buildings were located away from thoroughfares, so could more easily integrate into the landscape. I think that the Daveyo Bamboo School and the complex of buildings that the Suan Lahu organic coffee farm makes provide an archetype for the *Pattern Language: Learning Building for Natural Resource Management*, which can be seen in Appx. IV. While it is not perfect. It did not display all the properties without question nor contradiction. However, it had the most elements in one location that manifested in a way that was transparent to others.

Figure 4-3: Daveyo Bamboo School construction. Source: Daveyo Bamboo School https://www.youtube.com/watch?v=bcEcKntoULs Copyright: 2011 Jakhadte Jayo; zur Strassen, Carina; Powis, Neville.

The purpose in the school's construction, which is shown in Figure 4-3 and Figure 4-4 was to spread ideas to other farmers, who come there for courses according to the workers in Figure 4-5 who built it. The school building was the embodiment of that purpose in itself. Therefore, this building as part of a living Lahu Sheleh tradition was teaching by its existence and constructed for teaching use within it. For example, it was a place that allowed girls to learn and an old man to teach them, not only as a location for agricultural extension.

The building was constructed in 2011, and by the people who built it had various usage purposes in mind. zur Strassen told me when visiting that it was for "*educating local farmers*", this use for "*agriculture*" is suggested in the building film (Jakhadte Jayo et al., 2011) and thus agricultural extension seems likely. N.B. the use of "*famers*" and "*agriculture*" here must be taken as covering a wide semantic field and not with a narrow culturally misconstrued direct equivalence to: peasants, nor strictly agriculture as farming.

Figure 4-4: Timber use in construction at Suan Lahu. Source and Copyright: Ibid.

In the mind of users, these terms would respectively encompass; foragers, villagers and maybe varied practices carried out on the land. However, the Daveyo School Building is called "*a school*" and in the school construction video (Jakhadte Jayo et al., 2011) it is talked about it

being used for educating children, and children are shown within the building.

It was later used for educating children. Pre-motherhood females are seen as "*girls*" thus being children, though youth might be a better description. Younger children used the place too. According to the film (Jakhadte Jayo et al., 2011) there were plans for herbal education, music, language and other culturally important things to be taught in the building at its construction. It was used for some of those.

Figure 4-5: Constructors discuss school purpose. Source and Copyright: Ibid.

Jakatae Jayo says "*The Bamboo School we run two year …I close the last three months the Bamboo School, but now I have idea … I want the Bamboo School to be a Bamboo Museum, because we have a construction and the construction is the we make from the Lahu style, from the bamboo everything*" (Pine, 2013). During building it was planned that "*Lahu architecture will be one of the subjects taught*" (Jakhadte Jayo et al., 2011). Afterwards, Jakatae's Farm Life, a different location, has taught Lahu architecture techniques and taken part in "*architecture week*" (Da We Yu Hills, 2014). So this concept of preserving the Lahu building style was probably always in Jakatae's mind, though the museum aspect is lost to my mind at the Daveyo Bamboo School Building, though its physical manifestation does make it a heritage building displaying the "Lahu building style" or possible the Lahu Sheleh building style of architecture. This architectural and construction learning would be principally aimed at adults, or adolescents, Jakatae refers to "*students*" and "*10-year to 15-year*" olds that he has in mind for participation in the bamboo museum concept (Pine, 2013). The museum, preservation concept plays directly into the Modernist interpretations of the Venice Charter, rather than that of the Venice Charter revisionists' living traditions approach.

The jakugu and community setting

Doi Mot village has a strong sense of its own identity and a living thriving culture and a building may help to provide a strong center for the social patterns around that culture. Traditionally this may have been provided with a single communal center, called the *jakagu,* which is a circular dancing-ground where various rituals are performed and is shown in use in Figure 4-6. It is typically circled by a palisade as found in the Na Lahu (Black Lahu) culture (Spielmann, 1969) and can be seen in use in (Da We Yu Hills, 2014).

Figure 4-6: Kho Jouw We (Lahu New Year) is celebrated by dance in the jakuga. Source: Lahu New Year http://www.daweyu.org/projects.html Copyright: 2014 Jaffer, Rusty; Da We Yu Hills.

The Na Lahu may have been an ancestral group to the Sheleh Lahu, but even if not, could be closer to the earlier forms of Lahu nyi religion, which the Sheleh Lahu may have lost or altered (Spielmann, 1969).

The jakuga seems to have been taken by Jakatae as the logo, which can be seen in Figure 4-7, for the brand *Da We Yu Hills,* which is the name he used for his documentary film company. Here he seems to use the imagery of the palisade of the jakuga in the same way we would an arena. Jakuga is, beyond a circular area (arena) used for performative aspects happening, being extended as a visual metaphor for a vehicle for informative discourse around a subject.

Figure 4-7: Logo from, Da We Yu Hills showing the jakuga (Source: Da We Yu Hills Lake Side Global Services Learning 2014 https://www.youtube.com/watch?v=ugC0pbPj0KY Copyright: 2014 Da We Yu Hills

"*Daweyu Hills produces short films about village life and Lahu Sheleh culture. Early on Jakatae realized the value of film documentation, not only as a means to preserve history, but as a way to share glimpses of life between villages. If the construction of a house in Thailand were filmed, for instance, the resulting document could be shown to villagers in Yunnan in China*" (Jakatae Jayo and Scribner, 2015).

This jakuga would be analogous to a courtyard as found in courtyard houses in various cultures, such as Finnish rural culture, which were based on communal living on farmsteads. An example is the courtyard house (Finnish term: *umpipihainen* meaning closed off court) called *Annikin puutalokortteli* meaning Annikin wooden house block, in Tampere, Finland (Ollila, 2016). There, there is a communal life engendered by this dwellings-complex that encloses a courtyard, and this leads to a wide variety of artistic happenings and uses there.

When I visited the Daveyo Bamboo School early in 2014, it was never referred to by that name to me. Jakatae Jayo was not present there, perhaps occupied with his Jakatae Farm Life project and there seemed to be some kind of separation between him and Suan Lahu. The old man who had taught herb lore in the building had stopped doing that and only the agricultural extension was talked about as a current use of the building. No museum aspect nor architectural heritage aspect were mentioned. This could be related to the independent way of Lahu Sheleh culture interacting rather than any kind of acrimony between zur Strassen and Jakatae or the rest of the community. "*This again is this whole idea of egalitariamism in Lahu culture. There isn't some leadership of the Lahus saying 'everybody let's do this!', you have to say, 'I think this is a good idea do you want to do it or not?', and if you try to tell Lahu people to do something they will never do it. It won't happen… you have to give examples*" (Pine in Pine, 2013:2.

I have seen such independence with kung fu martial arts schools, where new masters commonly break from their old masters and start a new school with stylistic differences, rather than stay within the control of the old master. This new foundational pattern is found in China, where the large majority of Lahu people live and I propose came from there. It could be that the school-

for-children claim was being used as a marketing hook, as people are more sympathetic to cute children needing help than old farmers wanting agricultural extension services. However, training and accreditation for organic farming has been possible via this learning building. This has led to the successful accreditation of the organic coffee plantation at Suan Lahu. The coffee is sold directly to customers, which along with a program where people can come and help on the coffee farm brings in revenue. The school and single estate coffee brand have a multiplier effect and aim to spread best practice in terms of community interactions and production methods.

Daveyo Bamboo School Pattern Analysis

The following three pictures show the Daveyo Bamboo School building from the outside with Figure 4-9 and the inside with Figures 4-10 and 4-11, but they are static and lifeless as the dynamism is missing from a still image without people who are alive within it. The close juxtaposition with nature can be seen, and when the lighting is different from the stills a different feeling is created within the building. Some of this can be seen in the images shot during a presentation given by zur Strassen in Figure 4-12 and listened to by others and me in Figure 4-13.

Figure 4-8: Daveyo Bamboo School. Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

The teaching space in the building can be seen in Figure 4-10 and looking beyond is the store room in Figure 4-11. The stools and mats and board have all been used, though I did not see them in use.

Figure 4-9: Daveyo Bamboo School toward the back right room. Note mats, stools and blackboard. Source: Own work. Copyright: Marcus Petz.

Figure 4-10: Daveyo Bamboo School back right room. Source: Own work. Copyright: Marcus Petz.

While I was at the school building I took part in a presentation. While the interactive presentation progressed, with use of pictures as seen in Figure 4-11 we took turns to film, hence you can see me in Figure 4-12 and later edited the film of the presentation and our experiences at Suan Lahu. The film included Lahu, English, German and Spanish commentary.

Figure 4-11: Evelin Lindner (left) listens, as Carina zur Strassen (right) present. Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

Figure 4-12: Daveyo Bamboo School in use by 'Returning Dignity' attendees, author in white (right). Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

When I analyzed the Daveyo Bamboo School using the *property matching sheet template* found in Appx. II following the *methodology for writing a pattern language* in Appx. III my conclusions about how each of *Christopher Alexander's Fifteen Properties (modified descriptions)* in Appx. I were accommodated in the School were as follows:

- **Levels of Scale**

The Daveyo Bamboo School is set amongst the trees and shorter than the upper storey vegetation, though the vegetation does not overwhelm it. It frames it. The building itself is then divided into two parts: with a main thatched roof, and a side smaller roof which shades the platform, the platform and *stepped forecourt,* which can be seen in use by a man about to walk down the steps in Figure 4-14. I could not find a clear description and name for this architectural feature.

Figure 4-13: Stepped forecourt in use, creating a space for interaction. Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

Figure 4-13 shows the stepped forecourt in primary use for entering and leaving the building, and secondary use as a social space by the man sitting with his legs entering the space and the woman and man either side of him. I call it a stepped forecourt; though close examples seem to exist called a dooryard, shows an example of which can be seen in the painting *The Cottage Dooryard* by the Dutch master Adriaen van Ostade a copy of which Figure 4-11 shows.

Figure 4-14: The Cottage Dooryard, 1673 by Adriaen van Ostade. Source: https://upload.wikimedia.org/wikipedia/commons/4/4e/The_Cottage_Dooryard-1673-Adriaen_van_Ostade.jpg Copyright: Adriaen van Ostade [Public domain], via Wikimedia Commons, National Gallery of Art, Washington, D.C., USA.

There is no door in the Daveyo Bamboo School, so it does not seem quite right to use the term dooryard. All the examples of forecourt I saw seemed more separated from the curtilage of the buildings they were near.

Figure 4-15: Village House Forecourt near Nurthyang. Source: http://initiativeforgreenhabitats.blogspot.co.at/2010/09/ Copyright: used with permission.

The attachment to the building in Figure 4-16, which is an example from Nurthyang, India makes this seem closest to what we have in Doi Mot. The *genkan* (Japanese term: *genkan* meaning entrance, in Japanese: *げんかん*) in Figure 4-17 might be found in a similar form in traditional village constructions, but I only found clear examples of the genkan being inside the actual building.

Figure 4-16: Genkan, a "step" for shoe removal before entering Japanese homes or as here a chasitsu. Source: http://www.urasenke.or.jp/texte/tearooms/image/genkan.jpg Copyright: used with permission.

Figure 4-17 is outside, but still part of, a *chasitsu* (Japanese term: *chasitsu* meaning tea rooms, in Japanese: 茶室) and shows one with more of an outside aspect. Chasitsu is a Japanese term

that encompasses; tea rooms, as a part of a house; and tea houses. Tea houses, which are free standing structures, are commonly found set apart from a house in a garden, yet are modeled on rustic mountain grass huts called *soan* (Takeshi, 1988).

Likewise, porches, mud -rooms and wet-rooms in buildings for removing muddy boots or clothes seemed to be sheltered in a way this was not. These areas are then further divided by use of a hammock, small tables and mats on the floor. There is a ladder, but it is chunky and big in a way that makes the graduation from the platform to the stepped forecourt at a level of scale that works. The Daveyo Bamboo School building layout means the sides are divided by use of columns halving the spaces. Big mats, wide boards, and thick roof supports, work to balance the look internally so that there is not a dramatic change in scale. The columns themselves are buttressed on wooden blocks in an obvious way that breaks them up visually. That the building is on a raised platform makes space that alters the scale so that it is split vertically. It is built at a human scale rather than for elephants, so to adult humans it looks well proportioned.

- **Strong Centers**

The Daveyo Bamboo School building can be seen as a strong center when looked at over the whole site. The collection of buildings, which comprises coffee bar shown in Figure 4-18, the washroom, as shown in Figure 4-19 and the Daveyo Bamboo School building shown in Figure 4-9 come together to make a center and then within them the Daveyo Bamboo School building itself is another strong center.

That building itself is then divided into two parts with a main thatched roof and a side smaller roof, which shades the platform, the platform and stepped forecourt, as shown in Figure 4-14, which then make strong centers of their own. Further strong centers are created by the ladder and room layout. This is accomplished by use of mats and furniture arrangements, which can be seen in Figure 4-13. The other buildings also do this to some extent: with the coffee-bar being split inside and then split again with a table dividing that area. The washroom is not so powerfully doing this, as the verandah half does divide the area, but the visual effect is broken by the plain bare contiguous materials. As a result, it is without wholeness. This loss of wholeness gives the overall impression of being dead, and can be described as ugly.

- **Boundaries**

There are three buildings looked at here. I call them the Coffee-bar as shown in Figure 4-18, the Washroom shown in Figure 4-19 and the Daveyo Bamboo School building visible in Figure 4-9.

Figure 4-17: Coffee-bar with a clear verge, making a boundary outside it. Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

Figure 4-18: Washroom with a tiled area making a border as a verandah Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

The Daveyo Bamboo School building has a platform that makes a kind of boundary area. From the platform descends a ladder and this makes an area that becomes a boundary. I call this flat area a stepped forecourt (described above). The boundary effect is more evident when there are people going into or from this building via this flat stepped forecourt.

- **Alternating Repetition**

Repetition can be seen in the coffee-bar, the washroom and the Daveyo Bamboo School building. The washroom repeats elements from the coffee-bar by having a similar roof style, as does the Daveyo Bamboo School building. The washroom repeats upright planks and these complement the doors also being upright and repeating this element. The Daveyo Bamboo School building has many repeating elements and part of that is found with the choice of the mats which are rush or even patterned deliberately black and white which Figure 4-10 and Figure 4-13 show.

- **Positive Space**

Positive space can be seen on several levels. There is positive space between the exterior of the Daveyo Bamboo School and the outside. There is positive space within the Daveyo Bamboo School building with the rafters and the smaller thatching, stays behind it and then when looking more closely the stays and individual straws that make the thatch make a positive space. The people within the building and furniture contribute to making a positive space as positive objects with the matrix being the building floor and walls. Outside the tree trunks, banana plants etc. make positive objects against the matrix of the green environment.

- **Good Shape**

There is a good shape with the buildings, but it is not as obvious as in the case of Jenifer Casidy's House, which can be seen with her standing outside it in Figure 4-20. This house was another local building, built in the Lahu architectural style on stilts next to a steep slope and with care taken to accord its construction to match traditional building techniques.

Figure 4-19: Jenifer Casidy stands outside her new house in Doi Mot. Source: Own work. Copyright: Marcus Petz.

The shape can be seen by looking in plan better than when using it. The shape is symmetrical on a 3D basis this is a cuboid, which reduced as a 2D form to a rectangle. The Daveyo Bamboo School Building is split into different cuboids, which may then be split again into cuboids.

- **Local Symmetries**

The individual roof panels and "squares" of the building floor make their own local symmetries. The juxtaposition of these with the adjacent areas means local symmetry is created that makes a wholeness in juxtaposition. The front roof thatch of the approached roof contrasts in this way with the back half of the building. The open structure of the approach, with the more closed areas does this too. Local symmetries are created by use of the furniture compared with the adjacent area with a hammock and the area with no furniture.

- **Deep Interlock and Ambiguity**

When looking at the panels in the roof in Figure 4-21, it can be seen there is a middle panel that appears skew-whiff.

Figure 4-20: Daveyu Bamboo School showing roofing panels and rush mats. Note it can be seen that there is a middle roof-panel that appears skew-whiff. Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

This makes it be itself, and appears to belong to the right panel and the left panel. This is ambiguous and so it interlocks both the panels together.

- **Contrast**

Contrast can be seen not only from within the Daveyo Bamboo School building, but also from outside where the thatch that is fine contrasts with the large scale and flatter smoother looking panels.

The contrast is not fully stark, as there seems more of a complementary aspect than direct opposites. Yet, there is a contrast between the orangey color of the darker roof panels and the lighter floor color and again the whole building contrasting with the lush green surroundings.

- **Gradients**

A graduation of sizes can be seen in the Daveyo Bamboo School both internally and externally, with different sizes of posts, roofing support, thatch and panels. The floor has an even coarser size, which is augmented by the mats.

- **Roughness**

The Daveyo Bamboo School building displays roughness in many of its aspects, here roughness can be seen with the length of the roof poles, if you look behind, it can be seen that they form a wave and are not of the same length as each other.

- **Echoing**

Echoes can be seen in the Daveyo Bamboo School with the little areas echoing to bigger areas, the triangles of the roof at the front section with the triangles of the roof at the big section. The coffee-bar and the washroom echo the Daveyo Bamboo School building. The cuboid building with the smaller back rooms or the large platform of the middle area with the smaller platform, and then the steps are echoes.

The little wooden stools and then tables are an echo which extends from small-scale objects to larger ones, the largest being the building itself after the strong centers of the different sections used in the building. The echoing is not perfect as the stools are slightly different in style to the columns, the tables are a darker wood, which removes much of the echo, but there is an echoing effect.

- **Void**

The void manifests with empty centers in juxtaposition with strong or busy ones. In the Daveyo Bamboo School building, when learning is taking part, there is an empty center with the hammock and this platform, but a stronger void is seen where the steps and road area are leading to enter the building. There are voids in the sides of the Daveyo Bamboo School that overlook the village and mountains below. These act visually as a void. The outlook over nature makes a void it is true, but I believe it is more than that it is also a part of a good learning building for NRM. That nature can be seen, and that it forms the backdrop, not only has psychological benefits of calming, but also aids in the learning and integration into the environment, which makes a building have wholeness and Lebendigkeit. Not every location can have spectacular views over a raging ocean, mountain valley nor other wonder, but the area can be created in forests and other places by choosing and landscaping so that roads or glades are opened into. This was the aim with Hempel Haus at BOKU which is a learning building in a forest, to be a window on the world. Only I see this as not a separation, but a union with the world. A true communing with the environment. Some might argue that nature is so busy that a void cannot

exist and that it is an anthropological vanity to expect denuded nature to enhance what has been created by artifice.

- **Simplicity and Inner Calm**

I do not strongly feel this property in the Daveyo Bamboo School building, but despite my personal ambiguity over it, others may. In the washroom however, for me this property is displayed. When looking at the washroom picture there are some aspects that take away from this feeling. The enamel sink, glass mirror and the porcelain toilets destroy the feeling. The feeling is disrupted by the concrete floor, but to a lesser extent. However, the building as a whole does display this property and fits well with the surroundings both the wider environment and the other nearby buildings of the coffee-bar and the Daveyo Bamboo School building.

- **Not-Separateness**

There is an element of all buildings blending in, though more time might make them more blended.

- **Mutability**

Here the plants and even the logs from the Daveyo Bamboo School and the material itself are slowly grading and decaying back into the environment. This aspect makes a change over time. However, the Daveyo Bamboo School itself will also change in its usage as flexible use is built in with the back storerooms, furniture and mats. This usage change has happened already with a change from museum, to school, to agricultural extension centre and now tourist reception centre.

- **Vibrant Environment**

The greenery is very lush and all around the Daveyo Bamboo School.

Summary

The Daveyo Bamboo School building is one building, but it is connected with several others. This is important for validating some of the properties; in the same way, a community leader must have a community to be leader of. I think that the Daveyo Bamboo School provides a good model for other buildings that can serve a similar purpose, i.e. as a learning building for NRM. While my analysis finds some aspects well displayed, there are others that could be 'improved' upon. Doing that is no simple measure, and could well destroy or weaken important aspects of other properties. So I do not speculate here on how or where that can be done but just report the results as I find them.

4.1.3 Spirit houses

As well as these Lahu buildings, shown above, I saw a Lahu spirit house. I attended a festival day to propitiate the spirits in that Lahu community. At this festival a spirit house was constructed, that was deliberately outside of the village. While it was somewhat reduced, as the house is symbolic and of a size that no person could actually live in it, it did show aspects of the Lahu architectural style which could be employed elsewhere. Smaller structures could be used for paths and trails, as could some other constructed items.

Spirit guards

Figure 4-21: A Lahu spirit guard in Doi Mot. Source: collective images from the field trip (Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0]

Figure 4-22: Hmong 'spirit guard' in Ban Mae Sa Mai. Source: Own work. Copyright: Marcus Petz.

In the Lahu community, I saw platted rushes that reminded me of corn dollies or signs. Apparently, the purpose was to keep the spirits from the village, and they should not be removed. I found this out after some children had pulled one of these spirit guards out and thrown it away. When I picked it up from the plants you see growing in Figure 4-22, I was told, it was children who were responsible, for putting it there. I could not have it and it had to remain in the ground. It was returned to the location it should have been left in and is shown returned in situ in Figure 4-22 (left). I think such spirit guards, the form I found has been described by Matisoff (Matisoff, 1988a), could be adapted to make rush signs and used for indicating features in a forest. Hmong have a similar artifact shown in Figure 4-23 (right). Similarly, the spirit houses, which are huts built for ancestral spirits, could be used in such a way, much as we use now information boards or shrines in some cultures.

Hmong spirit houses also exist. I saw many of these religious temporary structures and one is shown in Figure 4-23.

Keeping them saves a valuable resource, which can be used to inspire better buildings in Hmong communities. Perhaps Emäntä Parantaja's building style adaptations she made with her Hmong herbology garden (cf. 4.1.6). I saw in the QSBG some small structures used for storage and seating. These were functional and pleasing to the eye. I believe they followed a Thai building style, which is not Hmong and not Lahu

Figure 4-23A Hmong spirit house outside Ban Mae Sa Mai. Source: Own work. Copyright: Marcus Petz.

specifically, but show the sort of construction that could be employed for low visual impact NRM. When contrasted with the Hmong ramshackle storage and animal pens they looked more beautiful to my eyes, but require more effort to build in terms of time and wood resources.

Action-based research – society issues

In attempting to do action-based research, I was stymied by the limitations of time. For example, with Emäntä Parantaja I discovered that she had a plot of land and would be interested in having a center constructed there that could be used to educate on the herbal and plant knowledge that she had. To my mind, this was a great idea as; she has much wisdom to share, was disposed to share it with whoever came without fee, and the knowledge that came with that wisdom was in danger of not being transferred.

Indeed, she had indicated to me that she had found it difficult to share that knowledge into a community of practice. Those she had shared with often did not remember or were unable to replicate her practice. I was not able to assess her pedagogical capabilities as a teacher with those from her own background, other foragers, healers or even indigenous people that wanted to learn. I could not evaluate whether the sharing happened under the stress of being with a sick person or when asking; how dedicated or capable nor psychologically disposed her 'students' were. Nevertheless, a centre would allow a visible and tangible location to store such knowledge in the community so that it might be accessed in a suitable way. As the location would be on a plot of land, it could form the basis of a physic and herbal garden, where readily accessible plants might be grown.

However, despite the idea coming from her, that this could be done and her showing me the plot, when I made contacts in the West she turned shy of the idea. There were Western people I knew who visited Thailand for more holistic 'wellness' focused approaches, and Western eco-anarchists that were looking for Asian community-based projects to support, principally in India but also potentially in Thailand. An American architect offered to help design a centre for free. Thus a potential support network is available should she have second thoughts.

When I asked why she had changed her mind, I was told through her translator, "*there isn't time*" as the world is ending. Her belief in the impending apocalypse, from the Seventh-day Adventist Reformers, had focused her away (Millenarianism) from actually dealing with sustainability in the here and now to a more fixated view of salvation in an undefined, but immanent imminent perceived future. This had been exacerbated by the practice of her Church which showed repeated videos of disasters during some Church gatherings, while preaching that we were in the end times and you'd better save your and as many souls as you can or you and they would be damned. The immediacy and threat had been a great motivator.

This use of disaster by association to advance a religious perspective was used to great effect in the science fantasy book Nightfall (Asimov and Silverberg, 2011), but here it seemed a reality and not a fictional usage. Unfortunately, to my mind the disaster video screening had been a motivator to spend the time praying and proselytizing and not a motivator to look at building resilience and recovery into the communities that were becoming aware of these disasters. It would be easy to criticize the Seventh-day Adventist Reformers and say they are destroying the indigenous communities by a mistaken and erroneous belief reinforced by cherry-picked data and Mondo films (shockumentaries) and that noble science and development politics could be better and more helpful for these communities. To lament that if only a secular approach were taken, or even that if Buddhism had been the religion promoted things would have been different. However, the evidence does not support such a naïve view.

Buddhism in the form that was promoted in the area would have been akin to Christianity in its organized form and now is very money focused, akin to rapacious capitalism and with less of an ecological and cultural sustainable focus than it had in the past in Thailand.

I mentioned as the reason why the learning centre in Hmong herbology did not progress as time limitations. I myself could only spend a limited amount of time in this location and this meant that the standard of trust could only progress so far, even with an open trusting person; they still need time to understand and build trust for their own due diligence. I was also there in the rôle of a researcher and not as a Christian, development worker or collaborator. This allowed me access, but brought with it some expectations as to what was not acceptable according to ethics and praxis. I did see that those I interacted with were curious and open to sharing and learning within their belief systems and another person who was suitable and connected for longer would be more likely to successfully empower via some kind of centre. Similarly, time prevented me meeting Jayatae Jayo and getting his perspective about many things, especially architecture and architectural practice.

Karen structures

Within the Karen community, the most significant structures of interest I saw were those built using the *earth building movement* innovations in Thailand (cf. 4.1.1). Rather like the accommodation that was built on the Steppes of Asia out of mammoth parts, the old building techniques of wooden houses alone are not sustainable in the current Thailand context and must be altered and broadened to include more sustainable resource use. Perhaps half-timbered

houses are a way to do this? Those I met are teaching the earth building they have learnt and so have a living tradition of learning and applying a new building technique. They have experience with wooden buildings, so it would be feasible to explore this possibility. It might make sense to extend to Thais and Westerners to co-learn with indigenous people some of their traditional techniques.

Scope of techniques

The techniques I saw for building can be adapted to build very large fit for purpose buildings, not only small centers like the Daveyo Bamboo School. An example of this is the Green School in Bali. This school, built out of largely bamboo shows it is viable to build bigger buildings with these materials (Macrory, 2013).

4.1.4 Nursery and Education Centre

In the Doi Suthep-Pui National Park (formerly Doi Aoy Chang) is undergoing various restoration projects. A successful one that has given ideas that are being repeated elsewhere is run by FORRU-CMU, which was founded by Dr. Stephen Elliott, shown in Figure 4-27 with the project logo on his T-shirt, and Dr. Vilaiwan Anusarnsunthorn in 1994.

Figure 4-24: Stephen Elliott promotes Project Restoration. Source: Thailand Project Restoration https://www.youtube.com/watch?v=YDg2scVUE8M&t=32s Copyright: 2013 Thailand International Destination Film Festival, The Thailand Film Office under Thailand Department of Tourism, Harrison, Lydia; Cooper, Callum J.

As well as doing plant research work, at the university and various other sites, there is a need to grow plants close to where they will be planted in the Upper Mae Sa Valley. As a result, there is a nursery, which is shown in use by Chiang Mai-FORRU staff in Figure 4-24 for growing those plants closer to the planting locations. I only heard people refer to the place as the "*nursery*", but in the past, it has been branded as a Community Nursery(Elliott, 2007) and now is referred to as the *Nursery and Education Centre* (Ibid.). There are elements, which could make it closer to a seed orchard than a nursery though.

Figure 4-25: View from the front of the Nursery and Education Centre showing stepped beds of the nursery terraces. Source: Own work. Copyright: Marcus Petz.

Figure 4-26: View from the front of the Nursery and Education Centre showing the relationship of the building to the stepped beds of the nursery terraces. Source: Own work. Copyright: Marcus Petz.

The nursery serves the local community of Ban Mae Sa Mai. In the same valley, there are other providers of trees. There are many trees left by the RFD, those trees are grown too close together and are not properly cared for. The QSBG carries out some nursery operations. I did not get the impression that there was a distinction between a *nursery* and a *seed orchard* in practice in these places. FORRU-CMU's *Nursery and Education Centre* could be said to be closest to a seed orchard with its careful selection of varieties, consideration of germination factors, with planting that is well controlled for purposes of good tree selection and survival. However, I was not able to go into the details to verify if this was the case at the nursery building shown above or more that this is happening at the growing locations elsewhere that the FORRU-CMU has at other sites at Chiang Mai University and in the operations carried out elsewhere in Thailand too.

Figure 4-27: Nursery and Education Centre in Ban Mae Sa Mai. Source: Own work. Copyright: Marcus Petz.

The nursery operations and restoration of the nearby forest is supported by a system of labor from the residents. Failure to perform labor on certain forestry days leads to money being paid, which help to support the project with food and other required materials. This labor requirement

is presented as a social obligation to help. So, not helping or being indisposed, is an accepted reasonable excuse when compensated for by monetary support, rather than seen as an imposition of a punitive fine from a dominating outside power in the eyes of the community. This is to be lauded as in other locations the locals have reacted negatively against being made to restore the forests near to them, on occasions destroying the work they have been paid in the day to do after outsiders, who led restoration efforts have left. Other monies come from various sources. Money is used to employ local people to be involved in seeing that the plants are properly planted and is given through a kind of patronage system whereby the local leaders are consulted as to who might be suitable employees to run the nursery.

The Nursery and Education Centre also serves as a location for education of Thai students from other universities doing a summer placement, myself as a foreign researcher and with some degree of outreach to the local villagers. To my mind, the interaction with the nursery is largely by the indigenous people of seeing it as a job or an opportunity rather than *their* center or *their* nursery to protect *their* forest. However, Hmong society can be very money focused (Vang and Hein, 2015) and the nursery does also provide some social capital, not just financial capital. When I was there, I did not see any indigenous language literature, information boards nor any way that families or children might interact and gain from the center itself. The children do gain from FORRU-CMU outreach, when the Arts Relief International, which is an NGO that has worked with FORRU-CMU on several projects (Harrison, 2013), come to the Jao Phor Luang 7 School in Ban Mae Sa Mai, and do art work, namely painting and discussion of the themes of the painting, around forest restoration. To my impression, this happens, but the depth of forest knowledge or restoration knowledge explored in this village school is not very deep. However, the use of arts and thus giving a value to the forest is useful in helping cultural expression and challenging possible outside prejudices over the place of forest-based peoples' ways of living in the wider world.

On planting days then the community aspect in how this happens means that very young children and adults participate in the restoration with practical planting. This is useful for inculcating a culture of valuing this as a living tradition for the people. However, I could see no material culture reminders nor celebrations nor artifacts of these activities in the nursery.

Elsewhere in the forest, I did see information boards and a little circle of information, but these did not seem tied into the nursery in anyway. I saw no map of the area or forests there. The building seemed largely functional, with low educational or learning potential coming directly from it.

The people of the village did know “Mr. Steve” who organized the regular work parties and so did learn some things from his organizing. However, Dr. Elliott only had a limited amount of Thai, though he was able to function as a university lecturer in its spoken use and negligible Hmong, the language of the indigenous people there. Most of his conversations were in English as far as I could tell. Information that is provided to the local people would be provided in Thai by Central Thai people.

The Nursery and Education Centre was built to a design that was imported from elsewhere, but as a building for use in the forestry related operations of FORRU-CMU. I have tried to find plans of that without success, but it is speculated that the WWF came in with the plan, which was a generic one from the UN, possibly UNESCO, but it could be the United Nations Environmental Programme or the United Nations Development Programme. It may have been seen as a general community development building, for agricultural extension services or as a nursery for forest restoration, but without specific plans it is not possible to see the design

background and thinking with this building's design. The Nursery and Education Centre was not designed by the indigenous people for the indigenous people. Notwithstanding that, it has been possible for Hmong to practice their traditional religious ways in the building grounds and the building is used. I attended a retirement event in the building. There were several lots of plants growing there proving it does function as a nursery.

When I analyzed the building using the pattern language property matching sheet for learning buildings my conclusions were as follows:

- **Levels of Scale**

When looking at the building on its own, the levels of scale are such that the building seems empty and it loses this feature of wholeness. Absence of recursiveness leads to a feeling of lifelessness, which is partially felt as looking at what could be called an ugly building. However, when looking from the front where the nursery beds are then it can be seen that the stepping of the nursery terraces do give levels of scale. The levels of scale lead to an interaction, which allows a recursiveness between levels and thereby generating between them, a wholeness. This wholeness leads to a feeling of vitality. This feeling can be said to arise as the subject of the feeling, the nursery terraces, look prettier than the building.

When Figure 4-24 and Figure 4-25,which both show the nursery beds with plants growing on them are juxtaposed it can be seen, that without the building in shot in Figure 4-24, the nursery beds appear to show levels of scale working and the picture looks in proportion. However, when the building is in view with the beds in Figure 4-25 it is clearer the proportions look wrong. This is a subtlety, which is not at first obvious from the images, but the building dominates the view and is not blending with the environment, because the levels of scale are wrong. When looking at the building on its own in Figure 4-26, it can be seen more clearly that the appropriate levels of scale are not there, so the building looks out of place with its environment.

- **Strong Centers**

The nursery building makes a strong center and within itself, it is divided in half, and then these halves are then divided more. Thus, we have a clear area, made between the posts, where the table is making a strong center. However, this smaller strong center is made by the use of furniture and people within it. The space is such that the centers while present still are spaced out in a way that makes the building seem functional rather than joyful to be in.

- **Boundaries**

Due to the building being designed on a generic building plan provided by an outside agency, it fails to take into account the local culture and the Boundary Property. There is some mitigation of this by the nursery planting beds, though this is serendipitous and fails to fully mitigate the building. As a result, the building is made colder and less welcoming when looked at. This could be adapted by making small stone-walls as are found in the nearby village alongside the road. Possibly these could have plants growing there with seating making a garden and outside area which could be used for learning or just relaxing.

- **Alternating Repetition**

There is some alternating repetition on the terraces of the nursery, but they do not mitigate the bare flat concrete inside the learning building. The learning building has a large patch of bare

concrete that dominates. The roof has some alternating repetition; but is made more beautiful by the leaves on it, an accidental feature, which lie a certain way because of the pitch and corrugations on the roof. This gives different angles of reflectance and thus an alternating pattern. However, the lower half of the building has too few breaks under the large logs to effect alternating repetition to be effective. A different roofing material and some extra aspects could be added, but fundamentally, this cannot be fixed easily with the current building.

- **Positive Space**

There is so much negative space, with bare flat concrete and minimal sides on the building in terms of columns that the proportion destroys the building from having positive space enhanced strong center objects, even when people are using the building. The area around the building does not mitigate this either, as it is carpark.

- **Good Shape**

There is a good shape, but lack of smaller definition and other properties means that it is lost. Therefore, it is not broken down into smaller coherent centers. Rather it seems Modernist with flat bare concrete floors and large open sides. Even being in the building does not give this feeling. In the image, it can be seen that people gather within the space of one quarter of the floor and try with the furniture to create a coherent strong center. This partially worked. Here floor design and use of furniture could help to change this for the better.

- **Local Symmetries**

Local symmetries are missing only overall symmetry is present. Thus, the building looks mechanical and lifeless. Floor patterns, décor or furniture could go some way to mitigating this. The rooms not visible in the image do not add to local symmetry, but instead accentuate the ugliness and functional aspect of the building, overall making an unwelcoming place. These rooms were not in good condition when I saw them and rather than being welcoming, encouraged people to keep out of the building and away from it. This is not good for natural resource learning. Addition of plants here, such as Emäntä Parantaja's green wall, could improve on this considerably.

- **Deep Interlock and Ambiguity**

This is just not present as so many other features are missing. Given the nearby steep mountain side a building that was built into the mountain could bring some of this in fairly easily. Likewise, some landscaping and closer use of the nursery growing terraces could integrate the building in a way that would interlock with the surroundings.

- **Contrast**

As there are not smaller centers there is no contrast, only on a macroscale and then the carpark does not allow a good contrast. The nursery beds do not contrast well with the building. They seem to be separate features rather than connected features. Small centers could be made by use of smaller buildings such as spirit houses, tool sheds, or plant features such as gardens. These would make sense in the context of how this building is used and provide a contrast to the main building, the nursery.

- **Gradients**

Graduations are only found with the steps and adjacent terraces in this building.

- **Roughness**

Roughness is there with the large supporting columns and frame of the building / seats.

- **Echoing**

There is an echoing of the trees, which surround, by the columns of the building. However, the echoing does not descend to a smaller scale within the building.

- **Void**

There is a void in the building and outside it. Unfortunately, there is only void, so this makes no strong centers, and the place looks empty rather than enhanced by the space in juxtaposition with other centers.

- **Simplicity and Inner Calm**

The roof is discordant, even violent, with the posts and the bare empty space destroying the idea of inner calm. Simplicity is not found in absence, like a skeleton missing its rib cage and one leg, it looks wrong and broken.

- **Not-Separateness**

The building is discordant with its surroundings. However, from a larger distance, it is not very stark and not obviously a sore thumb. The colors of the building mean that it is easily not noticed unless you were looking for it. However, on approaching it when you do notice it, you do notice it and it does not look charming nor right. Unfortunately, this makes you want to go away from the building instead of to linger there. This is not good for a learning building.

- **Mutability**

The building is so fixed that it is not altering over time, it will have to be demolished and replaced.

- **Vibrant Environment**

The nursery provides green plants being grown, but also the natural surrounds are there too. Furthermore, as part of a FORRU there is a huge area of new growing forest not far away. There is some integration with info boards and stations that includes this element well.

Summary

The nursery building itself would need a lot of remedial action to make it fit for purpose as a learning building or to bring any hybrid usage into it. It is not even a pleasant place to work for the functions it has been built for. My suspicion is that the generic plan is one that is for tropical countries and durability is the only feature that was really considered.

The location of the building could be debated, as to if it fits the purpose of encouraging interactions between the local community, the nearby forest restoration and in the future revenue and NRM. To my mind, the form is not suitable and the location has been influenced by other aspects of buildings in the nearby village. There seem to be several public buildings

that full use is not made of, a church, a guest house, temple, school, another hall and a football field support building all could be developed and better serve the community and NRM.

The fundamental problem behind these failures is that the buildings have not come from the community, but have been supported by outside monies for different aims. There is a strong need for agricultural extension services, the Doi Suthep-Pui National Park offers potential tourist revenue projects and culturally, natural resource usage rather than simple nature preservation makes sense. Fairly close to the area are sources of tourists with money, trails and other people that do use things in such a way. Perhaps there is a gender aspect too, where the men who led on this have been fractious and not been able to bring the community together. This could be a function of younger people not respecting older people, who now in Thailand, without the educational level of the younger cannot function so well in the society.

However, from the perspective of forest restoration there is a case to be made that the building is superfluous. Only the plant-growing nursery is really of any use and it is quite successful and would be so even with no building nearby. The building may serve some kind of security purpose by giving place identity to that nursery function, which is missing from some other places where trees are grown for forest restoration. This has the effect of avoiding neglect and thus eventual wastage of the planted trees as is found in other places.

4.1.5 Home

Homes provide the main built environment for adult learning outside of formal education (McIntyre and Cross, 2003). While learning can be accomplished by reading main stream media, use of electronic devices or books from libraries, this is frequently done in the home (McIntyre and Cross, 2003). Confusion can result when adult learners are asked about learning as they do not think of learning being ubiquitous, but in some cultures reduce learning to vocational learning and think of it in in instrumental terms related to their occupational situation (McIntyre and Cross, 2003). There are also differences between life-stages, retired, young professionals and mid-career professionals. Gender differences may be found too, but could be less important than the factors just mentioned. When it comes to indigenous people, who are marginalized and rurally isolated this is even more likely to be so. It has been recorded that one of the main ways of learning in the tracking society of the Kalahari San people is by tale telling. This commonly occurs around a campfire where prior hunting escapades are related and ideas for improvement are discussed (Liebenberg, 1990). The campfire is analogous to home in the sense that, it is a base, where food is prepared and consumed and sleeping occurs.

While hunting tales may be seen as 'the one that got away' exaggerations for self-aggrandizement there is commonly a learning aspect within the tales, which is founded on fact and the registers in vocabulary for the task, concerned. (cf. 4.2.1). In Thailand, I saw a variety of home learning opportunities. Pornpit Puckmai had her own library in her home in Chiang Mai. In many countries, libraries are public institutions provided by the state with free access and free to use and borrow material. In Thailand, this was not the case. There private entrepreneurs such as Puckmai would gather books and DVDs and loan them out for a small fee. Library membership costs or fees would vary according to the caprice of the entrepreneur.

However, Puckmai pointed out that the rise of information technology was making this obsolete. Her library had few visitors while I stayed there, and most of those came to use the adult workspace rather than borrow any of the material. Puckmai was Central Thai in culture, spoke good English and had an activist, feminist background. Was she typical of the kind of person that would run such a place? I think she was perhaps more educated than you would

typically find. A more bookstore approach would be what I would expect. In Chiang Mai, there were many bookshops, where you could easily get books in Thai, Chinese, Japanese, English and other languages.

Of indigenous language literature there was some, but very little. I saw no indigenous people reading any secular literature in their own languages. No one showed me anything other than minor writings in those languages. Therefore, the typical learning from written sources would not apply, to many of the hill tribers, who were not functionally literate. However, it would be a mistake to create a false dichotomy of literate lowlanders and illiterate highlanders. Literacy levels and registers would and do vary considerably between individuals.

I also saw the homes of the indigenous people and these varied as to what was in them and how they were used. I did not go in lots of homes and observe how they were being used over time, as I did not have time to gain the trust to do that. However, I did go in Hmong homes for extended periods, several Lahu and a couple or three Karen homes. The Hmong homes I went in had some special usages that I did see which are relevant to learning:

Emäntä Parantaja's home had a home garden, and many plants and animal specimens. I was told about the kitchen and the cooking aspects, which related to the food prepared for groups and me. This home was used as a consultation location for medical treatments, like a medical praxis; for religious gatherings for studying religion and worship, like a cell church in the house church movement (Page, 2004); family gatherings, and as a location where I was supported to do my research, like a learnéd gentleman's study. This last aspect is significant, as some cultures would push away experts and academics. In this culture, not only was I welcomed into the home by the homeowner, but also she was eager to share with me the benefits of her wisdom, knowledge and experience. This was a learning location for her and a teaching location, in effect, it was a co-learning location, much as we might think of a seminary or herbarium in a monastery where all are welcome to learn or also gain services.

Similarly, in the home where I stayed in Ban Mae Sa Mai I was able to interact with visitors, the host graciously took me to local markets, showed me a typical working day and arranged for me to meet other informants. One of these informants, Nuori Kisälli worked at the QSBG. Through him, I was able to learn much about the society and village. He took me to meet a female shaman, a local craftswoman who made traditional products to sell and his older relatives and translated for me. All of these I met in their homes. They did not have distinct places of work or learning. The host of my place followed kevcai Hmong and gained me access to a traditional ceremony in a nearby home, which was also a learning experience for the participants. The main informant he connected me with maintained some Hmong traditions in his family where he lived with his parents, but given his job was tolerant of different religions.

If I consider the other homes I saw, I did not find any opposition nor problems from people about me being there, but I did not also find such a proactive approach to what I wanted to do and discover. I cannot say that this was due to any cultural aspect, rather than: the individuals I interacted with had their own ways of being, the short time I was with them, and thus difficulty in gaining sufficient trust or crossing language barriers.

When I went to Ban Nong Tao I found different uses of the buildings. The larger buildings, which were also homes, started to form the function of local community centers. The main one I went to seemed to be such a place. On the walls were many pictures and archiving of old documents showed it was important as a community repository of knowledge. Around this home was an interaction with other centers of knowledge, which were strong centers in the

landscape. Most noticeable was Chiang Mai University. The 'Returning Dignity' conference took place both in CMU and on several field trips, one of which was to this home. At that conference were Hmong and Karen people and some other ethnicities were present and talked about as well.

People from that Karen house also related to other nearby smaller houses. We stayed in different smaller houses in gender separated sleeping locations. We also saw new smaller houses being constructed by earth building. While many Europeans would seek to build as big a house as possible, a mobile culture has not this need and it becomes problematic. Nevertheless, the rotational shifting culture of the Karen was more of a settled one than it had been formerly and there practice was changing re mobility.

Traditionally a house would be moved from the old location to the new one in a process. That process was common for Hmong and Karen people. A new location would be scouted and while moving and building a new house the old one would be temporarily maintained. Finally, the remaining useful things from the older site would be taken to the new and the old remnants abandoned. This process is different from a fully nomadic culture, which carries everything with it as found with a pioneer shifting culture. Such a process could take a few weeks or months depending on various factors. Now that was not happening the desire for better-built houses, which would not be moved, was making the earth built houses a realistic prospect. It was making split bamboo and thatched houses less desirable when juxtaposed against the new possibilities and restrictions on wood harvesting and difficulties in occupying new sites.

The Lahu homes I saw in Doi Mot were a mixture of smaller homes, that a family might use; and bigger homes, which are starting to be used as tourist accommodation and small businesses. The business approach is not strong in the Lahu culture and is mostly being affected by the presence of outsiders. These are more likely to be farang rather than any other cultures. With this in mind, we started to see massage schools, yoga and other spiritual approaches as more common. Sauna was also started because of this. Other tourist activities like elephants riding or rescuing; trekking or walking along forest trails would be possible, but did not seem to be common for the people that I encountered. Jakatae's coffee shop idea derived from the Suan Lahu coffee farm (cf. 4.1.2), bar and school he had co-developed is evidence of innovation diffusion in that population. Jakatae, as an entrepreneur could be said to be an innovator or an early adopter. This process could be attacked and lauded on different grounds.

Jakatae's place was not a "*human zoo*", as existed in the past, where indigenous people are forced to live in a traditional way next to another indigenous person for touristic edification (Trupp, 2011). It was a genuine way to expose people to aspects of indigenous culture. However, it was a dated view of indigenous culture, for example only wearing traditional clothes and living in bamboo huts with no running water nor electricity is romantic if you have not lived that life. Compared with more modern ways such an existence is time consuming and hard. A coffee bar and guest house business monetarizes the culture. These buildings are not cultural appropriation, as they are genuine constructions by indigenous people. People really would have (and some do) lived that way. However, the social patterns around those properties are different. They are more materialistic and money focused. They go away from a culture of hospitality that is reciprocal and free toward one that is monetarized and contingent on a cash economy. We can see the same thing on a global level as people's homes that were welcoming for CouchSurfing, BeWelcome and other hospitality services start to become hotels in all but name with services like Airbnb or OneFineStay. The dwellings in the sharing economy of homo reciprocans are becoming occupied by the homunculus economicus who only cares about

money and thus the sharing economy can be better termed "*jerk tech*" (Constantine, J. in Katz, 2015).

As indigenous people, such as the Lahu, move to more modern ways they are abandoning the sustainable homes for wooden or concrete constructions, for example concrete steps on the trails (Da We Yu Hills, 2014). This can be seen in the Hmong places I visited. This may seem progress, but it progresses away from close to nature approaches and makes managing natural resources harder. If you have to rethatch your roof every 5-10 years, you will engage in cutting and binding the thatching straw. If you have only corrugated plastic roofing, you do not even crop straw anymore. The Hmong people are Modernizing their homes, but they are not upgrading them to upper class Hmong style homes from within their tradition. Instead, they are altering their way of living to that of Thai settled peoples. This means over time they are losing the features found in the homes that allow natural resources to be close to them. The knowledge and chains of transmission around land management knowledge and natural resource interactions are being broken.

The house I stayed at in Ban Mae Sa Mai had epiphytes hanging up, planters and I saw a conk, which someone had gathered. These were used in traditional medicine and food. They had been brought to the house due to their utilitarian, rather than their aesthetic beauty. Yet the motor mechanic (engineer), who lived in that house, did not value them particularly and fewer extended households (White Hmong term: *tsev neeg* meaning household) were gathering and using them. Instead, they were defaulting to the market as a source of consumable food and medicine from pharmacies. This could show a change from, tsev neeg in several different buildings, toward one nuclear family in one house. However, the same Hmong culture showed with Emäntä Parantaja's house that it was possible to still keep such plants, gourds, turtle shells, conks and accoutrements and to be innovative (cf. 4.1.6).

At both the Hmong houses, I stayed at in Khun Wang and Ban Mae Sa Mai, an area of common space was important. Both houses had internal to the building (semi-private) and external to the building common spaces. In both cases, the external spaces provided locations for cooking. In the house at Khun Wang, there was also a kitchen inside the house, which rapidly filled with smoke and for me made it impossible to stay there. My head was in the fumes, but for the shorter people there they could stay and talk, which they did to some extent, but the focus was on food preparation. Instead the social spaces were somewhere else than this inside kitchen. They were inside the house in a main room and outside, where a cooking location existed. Around these people could and did gather. There we chatted and shared knowledge. Visitors were received here. Within the houses, there were smaller private spaces, which I did not go in, except to sleep and the main room semi-private space was used, but less than the external common space.

In Khun Wang, a lot of the food the owner had gathered from the forest. While preparing that food she would tell of how she gathered it, how it could be used, and discuss other aspects around its management. This need for a semi-private space is important and seen in other settings and cultures (Bertoni and Brunello, 2014).

Although I took part in collective working when helping to construct an outhouse in a Lahu village, all those working on the building, when I was there were not Lahu. In the Karen village, there was the possibility to construct an earth building and there were local children and adults working with Westerners on construction. When Emäntä Parantaja talked about constructing a learning building on her property there would have been support from both Hmong and Westerners to construct it, but she did not pursue this while I was in contact with her.

In many societies, the semi-private space allows a gathering to exchange knowledge and is around a table or campfire. Indeed, both of these possibilities were seen by me in the Hmong houses I stayed at. There a small table was used, for not only sitting around as a focus, but also for talking and exchanging knowledge. On the walls of the homes, I also saw some pictures, a calendar and other objects. These served the place of a mantelpiece in English culture.

However, in the Karen house where I met with the wise folks there who were doing the Lazy Man School this was more developed with pictures being used to educate and a store of material kept for education about forests, their own culture and political discourse in their society. This material was well known to the CMU Faculty of Social Sciences and this meant it was not lost or kept in the community as forbidden knowledge.

There were differences in how the houses were arranged. The material in the Karen house seemed to be better arranged, with a cleaner, tidier aspect to its storage than in the Hmong houses that I saw. I think this was only partially due to the difference in culture. A fundamental one is that Karen houses are built of wood on stilts and so have wooden platform floors. Whereas commonly Hmong houses were built on the floor directly and so have earthen floors. This makes storage different between the two. In these cases, the difference was more I think to do with class, that the Karen people I saw were leaders in their society and had a responsibility, which was missing in the Hmong houses where I stayed.

In the Lahu homes I went to, I saw traditional clothing for sale, and the meaning behind it was only partially explained. It maybe, some natural resource aspects were visible in the clothing in the past, such as particular flowers that carried certain messages. However, the clothing I saw was being made for sale to tourists as much as for wearing by the indigenous people. Enclothed cognition (Adam and Galinsky, 2012) did not seem to be a part of it. Rather what was chosen was, what the cloth market sold, which was dictated by suppliers in China.

Enclothed cognition was seen in the Karen people very strongly with their red shirts, which while not worn all the time, were worn with awareness of what they meant. Simply it meant you walked your talk. You would speak truth and treat people honorably. Karen honor is different from other cultures. Small items are communally owned and so taking them was not traditionally regarded as theft. The enclothed cognition in wearing a Karen shirt has a ritualized aspect, when it is consciously put on rather than worn as just everyday wear.

I did see some Hmong women wearing traditional clothing in their daily lives. I did not see any Hmong men wearing traditional clothing. Many of the Lahu people wore traditional clothing. I also observed all of the peoples researched wearing non-traditional clothing. This was mostly T-shirts and jeans, or shorts. The choice here is the same as in Europe. All countries, except England have traditional clothing, often called national dress worn at certain times. This can be seen when looking at folk music CD covers, many of which show people wearing appropriate clothing, the English musicians have ordinary every day clothes on them, the non-English ones often have some kind of folkloric costume or clothing. Mostly it is considered correct to wear national dress for formal or informal gatherings, and for daily use. Yet wearing of national dress is not common on a day-to-day basis in many of them. So it was in Thailand.

However, the traditional clothing is made to function in the environment of use. Just as clothing must be durable, it must also be loose enough to move in and perhaps contain pockets or accessories to carry materials in. For this reason, baskets and bags are needed for NRM and I saw many of these in the Hmong houses where I stayed. There were also adaptations for particular needs, just as the Sussex trug (English term: *trug* meaning a shallow open basket for

foraging) (Tuffin, 1971; Laws, 2014) might be ideal for collecting mushrooms in English culture.

So how did people know which basket to use? This came in the case of the Hmong by talking with others and when engaged practically. After these experiences, new baskets could be made that were comfortable and the right dimensions. This talking did happen in the home, but also outside it when people might meet and exchange ideas from a foraging culture. My Hmong respondents said demonstrated they learned from other cultures and shared freely with them. Thus, it can be hard to ascribe a particular basket style to a particular tradition. Trading between cultures is very likely too, so that one village weaver makes baskets used by another culture. The choice of basket or clothing affects what is gathered and how it is managed. Thus, the traditional tools, clothes and volumes of growing materials taken by the people along with the harvesting techniques would all come together. Not only enclothed cognition, but also *entooled cognition* can be found too. I saw this effect when people explained that certain knives or tools for harvesting were connected with certain stories.

While the stories could be told by anyone, the learning of the stories was done in context. The context of a certain basket being full and how much work in terms of time it takes to fill it and thus how much and from where is harvested all create that NRM procedure. A Western equivalent might be that when shopping in a supermarket if you take a hand basket or a large shopping trolley it will affect which items you take in terms of amount or size, numbers of shopping trips, number of items. This will affect your diet and in turn, which shops or market stalls you must attend to complete your shopping. Similarly, the eating culture affected how much food was used or wasted. In the Karen house I was cautioned how to eat so that I would not take too much food nor too much alcohol.

In the Hmong houses, food was served in a way that you would sample different tastes. This meant bitter was a taste that was desired, and with this mix, a balanced diet could be achieved. Behind this was also diversity in cropping so that over cropping did not occur on foraged plants and the awareness of eating a broader range of plants than just a rice-based diet would suggest. This expansion of diet means a greater awareness of biodiversity in the forest as more variety eaten means, more variety harvested and grown and a greater ranging for gathering that food. It also means a plant can be cropped as it will not be eaten straight away and has a chance to recover from human browsing. Awareness of the plant diversity was encouraged that directly had this effect. I got an awareness of the chains of local economies and dependencies by being taken to local markets, being shown where food was being grown and shown how and where food was taken directly from the forest and how it was prepared. This food focus and co-commitment knowledge transmission by good eating, making good feeling and connecting taste with experience and lived context was binding me to the land, culture and production methods. It would not be possible to countenance destroying the forest to grow flowers or big tomatoes if you also rely on that same forest for your supper and have little to no use for those things. This learning was a tacit knowledge and not explicitly stated, but was communally shared as all ate from the same pot.

This approach seems akin to the *Slow Food Movement* (Slow Food, 2010) and the *International Federation of Organic Agriculture Movemets – Organics International* (IFOAM) with their *IFOAM Principles of Organic Agriculture* (IFOAM, 2005) of thinking of organic culture being beyond just the practice of not using chemicals. It was in stark contrast to the Upper Mae Sa Valley where in the Doi Suthep-Pui National Park the *Framework Species Method* was used in cooperation with local Hmong people, the WWF and the FORRU-CMU for forest restoration to bring "*lush tropical forest*"(Elliott and Kuaraksa, 2008:4). Here when I enquired about what

was being restored, the focus was not on making a usable forest garden that would facilitate the locals' involvement and interaction as a forest people long-term. Golf, the FORRU-CMU Education Officer, has described this forest as "*like a supermarket for the local people*" and that "*they can get everything that is necessary for living from the supermarket*" (Harrison, 2013:1). Yet instead of restocking the supermarket, the impression I got was that aim was about the national park being restored to a treed forest, and thus the trees selected were on those that would restore easily and rapidly.

There were no plans to plant bushes or think about arrangements of utilitarian forestry with snags, clearings or a more heterogeneous landscape. Monitoring was confined to tree species and not insects nor other plants. As a national park, the long-term implication of restoration was the removal of the forest people from the forest. This was not stated explicitly, and realism means that some long-term accommodation of the population that is in the local community must be found. Perhaps after the successful restoration of trees, other aspects of the forest and forestry will follow. Without considering how Hmong people can live sustainably through forestry, being built in from the beginning of the project; it is hard to see how they can be integrated later on. This planning for alternative ways of living is needed, rather than hoping the previous destructive agricultural practices will not return.

I did not eat very much in the Lahu community so cannot comment if these deeper aspects are considered there too. We did have some communal eating, but as it was an organized trip as part of a conference and we mostly ate in the coffee bar, run with a more Western oriented approach, it may be less transparent or even considered. I did not see any aspects related to water resource management while I was in Thailand.

4.1.6 Home gardens and the garden in the forest

Central Thai

When I talked with one Central Thai informant I found out that she did have a garden and had been influenced by her husband's culture, he was a Danish agricultural consultant; her family traditions, which were Chinese and rural; and some urban presences. High status individuals (e.g. Queen Sirikit) in the culture had an influence upon the popular desire to have flowers and to value them. It was desirable to have fruit trees around the home. This is a class-based trend, to which rich people from any culture would aspire to within Thailand, indigenous peoples or not.

Her relationship with nature was one where in the culture, as she was raised, when walking in the forest if she saw something she liked and wanted, she would just take it home. Danish sensibilities about nature preservation moderated that so that when she saw a friend about to pick a beautiful bloom she was able to admonish her with the information that if she took it no one else would be able to benefit from it. Here there is a change that is found widely in Thai culture, and presumably can be seen in many cultures, of a growing environmental awareness (Spowers, 2003; Hawken, 2007). A perspective shift from; *the flowers are not so numerous and taking a few makes no difference*, to one of *the flower is there for everyone to enjoy and its removal is enclosing the commons*, or stealing from the commonwealth. This has perhaps been influenced by the realization that forest-land is being lost, and has also been seen in royalty; the King stopping deforestation, and changing the RFD from one focused on revenue and exploitation to move in the direction of preserving and restoring damaged forests. Queen Sirikit's valuing of flower has led to putting resources and money toward protecting them.

My respondent told me she did work in her garden cutting a tree. This was seen in Central Thai culture, according to her, as slightly amazing that a women had done this. While women would always have worked in agriculturally related things, there is a gender aspect that tree cutting is a man's not a woman's rôle. This can be speculated on as to whether forestry is gender determined, there are few female foresters; or perhaps it is heavy work and men do heavy work and women not; or that it is not related to food gathering, and non-foraging is a man's rôle and foraging is gender neutral and thus something women can do. Although this was amazing, nowadays it is not considered exceptional as female emancipation sees gender neutrality as an expectation, if not always a reality that steps beyond stereotyped traditional rôles with their implicit gender rôle bias. Her garden contained plants, which relatives had given her, and those she had collected herself for aesthetic purposes.

Flowers that she grows or comes across that are particularly striking or relate to a given event may be photographed and shared through social media (Facebook and email) with others who find them interesting. This sharing was based on aesthetics of visual arts and not on the usage properties of the plants or at times even the correct botanical identification of the plants concerned. Class and wealth may also play a rôle here.

Hmong

I saw plants that formed incipient home gardens in the Hmong communities I visited. Such collections of plants maybe completed as far as the Hmong regard them and they may have no intention to develop them further as gardens. Many of the Hmong people were growing plants in greenhouses. These were more like commercial polytunnels than Dutch frame glasshouses (Beckett, 1999). They were also purchasing plants as food from local markets and to a limited extent from visiting travelling salespeople and local stores. The local stores would be small general stores, and not supermarkets nor even hypermarkets. Though these both existed in Thailand, they were more expensive, tended to be located in urban areas, not the mountainous villages where indigenous people lived agrarian and forest-based existences. Quite widespread in Thailand were also 711 filiales. These small general grocery chain-stores are also more expensive, contain many ready meals, and processed food.

What I did see in the village I stayed in were some dried plants hanging up, a conk, and some epiphytes. At the time I was there, they did not look particularly aesthetic and the house where I stayed seemed to make no practical, culinary, medicinal nor ornamental use of them. This was I believe a generational affect, the dwellers in that house were millennials in their twenties and no longer found them a useful part of their culture. In other houses, I saw such plants not only hanging up, but also gathered around the house. While from a Western formal gardens approach, it was clear that they were not weeds that just happened to be growing around the house. Neither were they arranged in anything that appeared to be a planned garden in terms of aesthetics, physic nor kitchen garden use. However, I deduct from the information given to me by Emäntä Parantaja and Golf that they historically did have uses more for physic than kitchen garden use.

Actual kitchen gardens could be found in some places, but the widespread presence of chickens scratching about meant that they would not last long in the village context without being raised somehow or moved outside of where the chickens could get at them. There were pigs too, but they seemed to be kept in sties, which meant there was little risk of them digging up the gardens.

In Khun Wang village, I saw something different. Emäntä Parantaja herself owned her land with proper title. Land ownership and not just usufruct has an effect on the development of gardens. In Finnish culture there is a saying, own land blueberries, other's land strawberries (Finnish

phrase: *oma maan mustikka, muu maan maniskka*) which denotes that sentiment. Whereby, with shifting culture gathering wild plants is fine, but once strawberries start growing then it will be someone else's land and the motivation to be doing that labor intensive work of weeding for productive cropping is low. So this influenced the absence of a developed gardening culture I have seen in both contemporary Hmong and Finnish cultures.

Emäntä Parantaja went regularly to gather plants in a nearby forest as part of a foraging family, which included her mother and deceased husband. She also ate from what she foraged. So on her land she had two types of garden:

The first kind started to approach what we would see as a private garden in the Western sense, being a plot of land where there were plants growing according to some plan, to make beds and areas for growing plants for usage. This was not easily accessible from her house.

The second kind of garden showed perhaps where gardening came from, in the same way we see that domestication of animals happened. This can be usefully contrasted with the evolution of the Austrian form of Alpine gardens. The domestication of diverse plants also must have been a gradual process. Her children had built around her house fences and areas where she could transplant plants from the forest. So these were not arranged with a predominantly aesthetic aspect in mind, but a practical aspect for usage. This mirrored the storage spaces she had within the house: where specimens, dried plants and useful tins or self-made packages connected with plants were stored. These were stored separately from the kitchen and cooking related vegetables and herbs. They were clearly there as a physic store or a 'medicine cabinet', if you will an apothecary store. Apothecary is described thus:

apothecary (n.) mid-14c., "shopkeeper, especially one who stores, compounds, and sells medicaments," from Old French apotecaire (13c., Modern French apothicaire), from Late Latin apothecarius "storekeeper," from Latin apotheca "storehouse," from Greek apotheke "barn, storehouse," literally "a place where things are put away," from apo- "away" (see apo-) + tithenai "to put, to place" …

Drugs and herbs being among the chief items of non-perishable goods, the meaning narrowed 17c. to "druggist" (Apothecaries' Company of London separated from the Grocers' in 1617). (Harper, 2009).

Outside plants were similarly collected rather than hoarded so that the most useful plants were there, also some others that were accessible. As she still went regularly to the forest to gather plants and had not arranged them to make flowerbeds, it can be seen that this was done for usage purposes.

I enquired about this *Hmong herbology garden* and its history and plant selection. It had originally been created as a communal garden, thus acting as a community garden that brought people together; partly as a teaching garden, with Emäntä Parantaja taking the main pedagogical rôle here; in another location (cf. 4.2.2). Its purpose was primarily for herbals for health treatments and thus a kind of physic garden. As her life changed and she was not giving so much time to that other location, the garden had become neglected by the other people. She then moved the plants to around her house. The design of some of the features, for example the crates that held plants had come from one of her sons, but mostly at her direction and can be seen in Figure 4-28. This hanging replicated the natural form found in forests while subverting the form of hanging baskets.

Figure 4-28: Hanging crates in Hmong herbology garden. Source: Own work. Copyright: Marcus Petz.

Her green plant wall shown in Figure 4-29, is another feature in this Hmong garden and demonstrated innovative aspects of garden design.

Figure 4-29: Green plant wall in Hmong herbology garden Source: Own work. Copyright Marcus Petz.

This newly located Hmong herbology garden had been co-created by her and her children following her design requirements, so here there was a chain of transmission not only of the knowledge, but also its practical application. She lived near her mother, who was also a herbologist and had taught her, though the mother's house took a different form. Such an indigenous garden design could be replicated in many Hmong homes. It could even spread to other cultures in the same way that Alpine gardens did in English culture.

I have seen green walls at Karls Garden, Vienna (Hargarter, 2015). The living walls in Karls Garden are called and installed by the firm *The Vertical Magic Garden* (Rettenbacher, 2016; Rongitsch, 2016). The form was denser with less air space between the plants than the Hmong living walls. The Hmong living wall echoed well the wooden aesthetic the crates provided and worked for preventing mold in the plants that were growing in them.

I think they are probably quicker to construct and use less material than the Vertical Magic Gardens.

This means that there is a demand for the features, which the Hmong herbology garden displayed, in Europe.

Thus, this is a marketable concept, but would need a champion to describe and construct such a Hmong herbology garden, as well as a suitable pedagogue to carry out the herbology, educational aspect that is connected with the plants within it.

Figure 4-30: Epiphytes catered for in the living green wall of the Hmong herbology garden Source: Own work. Copyright: Marcus Petz.

While all the plants in this Hmong herbology garden had a use for treatments, there were also some flowers chosen with an awareness of their aesthetics, akin to a front garden, and indeed, they would be passed by on entering into the house. They were there not as a purely ornamental garden, but as plants that could be used for other purposes. An example might be someone planting a cherry tree that has nice spring blossom, but also provides edible cherries. Rather than a planter, a piece of wood was adapted for growing epiphytes as can be seen in Figure 4-30 and elsewhere conks were catered for and can be seen in Figure 4-31.

Figure 4-31: Conks cultivated as part of the Hmong herbology garden. Source: Own work. Copyright: Marcus Petz.

While this was of interest what was of even more interest was what I call the *garden in the forest*. In this case, I saw this when attending a forest walk (cf. Forest walks (Hmong)). Here the forest was blatantly natural, and was clearly not planted agriculture, or was it? There were a couple of relevant elements. The particular way we walked was well known to Emäntä Parantaja. She had been there before on many occasions and harvested plants for usage.

While a traditional forager's conservation ethics were demonstrated: not removing all of a useful plant, to avoid endangering or extirpating it; not going too frequently to a particular foraging location, there was some evidence of a deeper awareness too. I believe there was an awareness, that harvesting may alter the floral balance, and the presence of people walking on the plants may damage some aspects of that place. Nevertheless, the path we followed had been shaped by a desire to find certain plants at certain times, which started to mediate the environment and turn it from wild to cultivated.

There was evidence of 'weeding', where undesirable plants encroaching on desirable ones had been removed; and 'planting', where desirable plants had been encouraged to grow, perhaps by seeding or seedling transplantation. This practice of 'improving' wild areas can be seen in the USA, when those that eat an apple cry "*I am Johnny Appleseed*" and throw apple cores in a place away from the apple source in the belief the apple will provide a new apple tree. Cultural relativism allows me to claim this is an equivalent practice of wild area improvement by Emäntä Parantaja. This *garden in the forest* is this just one kind of forest that is a hybrid between a garden and a forest. Just as there is a taxonomy of purpose for gardens so, one can be proposed for forests, rather than one based on ecological characteristics.

The garden in the forest is thus a new type of forest; it is not strictly a demonstration forest as it has a local community of users. Yet it also has elements of *Waldpädagogik* (German term:

Waldpädagogik meaning forest pedagogics) (Bolay, 2015) taking place within it and some elements of cultivation, albeit close to nature and focused not on the trees, but other useful plants.

Queen Sirikit Botanic Gardens consist of a large grounds and a museum employing modern museology. There is good public involvement, a low clutter layout of displays and the exhibitions are a little closer to being interactive than traditional museum displays. There is a good focus for children and foreigners as the info is provided in English and Thai too. Spoken word and local languages could be good to introduce too. There are museum guides who are Hmong, who do explain some of those local cultural aspects in Hmong. Here the forest, for example the walk of banana plants is best described as a research forest, which is now engaging in agricultural tourism, or forest tourism. It does not have a local community of users; the principle users are visitors for research, educational or touristic purposes.

The *Hmong restoration forest above Ban Mae Sa Mai* is used by Elliott to teach about the forest purposes to Thai students, and somewhat to the local people of the village. There are jobs given to manage the *Nursery and Education Centre* and everyone must get non-formal learning by a number of labor days. They also can pay a small amount of money to support the forest. This lends itself to becoming a community forest, but this did not seem to be the conscience when I was there. Also missing were signs / info boards or any kind of trail or exploration of the forest that might lend itself this way.

As for cropping or gathering from the forest this was also missing with the exclusive view point dominating rather than seeing the forest as a resource nor working with local people to put in features such as a forest garden or planed forest works. These could be introduced, but the relative newness of the restoration meant these features had not been developed. There was the concept of nature reserve excludes local people rather than integrating them into a better (admittedly a subjective better) management of the land resources.

4.1.7 Hmong portable material culture

I was shown in the Hmong community of Ban Mae Sa Mai the use of the tools in Figure 4-32, Figure 4-33 and Figure 4-34 during fire-setting. We used these tools when we first had to clear land, I believe for a fire-break as part of FORRU-CMU's protection of the restored forest work. In this case, both men and women labored together in groups that were not gender separated. I could see no real difference in the activities that were undertaken based on gender. Tool use was equal, gathering of wild food to snack on or share with others was equal. There were clear differences when eating, men and women did not sit together and ate separately. On one occasion, a burning patch was out of control and aggressive action was taken to bring the area back under control. In this case, I saw the younger men deal with the incident and women and slightly older people stand back.

Figure 4-32: Fire-setting tools. Source: Own work. Copyright: Marcus Petz.

Figure 4-33: Bush cutter (left), oil (middle) and fuel (right). Source: Own work. Copyright: Marcus Petz.

There was an age split in the work. No children were brought to do this work, so women looking after young children would not be present and children were most probably in formal schooling. It is hard to see if this is traditional practice as on other occasions I did see children taken to pick strawberries, but most of the cases of work crews leaving to work on fields in pickups did not have children with them in their vehicles.

When I questioned Nouri Kisälli, he told he went as a child to work in the fields. As he was in his twenties, and this must have been recent times, I asked some more and was informed that he would go with his uncle and both of his parents.

Figure 4-34Figure 4 35: Billhook used for cutting nuts, plants and general clearing. Use being demonstrated. Source: Own work. Copyright: Marcus Petz.

Tool usage by Emäntä Parantaja showed me that she was gender neutral in approach. I asked her; who would she teach? Who would she learn from? She was neutral and would teach anyone, which she did, leading me in a mixed gender group into the forest to show us how she used tools to gather crops. As our purpose was partly to gather some specific crops there was minimal time for training in their use. But if I wanted to learn, she was willing to show me.

Tool usage in a traditional animist religious ceremony was gender based as the activities were aimed at elders training some younger people in skills so that they too could carry on the tradition. In this case, all the 'students' were young men. All the 'shamans' were elders. Both were all men. Although women of various ages were around, they did the cooking from what was provided, which seemed to be chickens that were ritually slaughtered and rice. As I met a woman shaman, it must be that women can also follow this process. Traditionally only men could carry out certain religious practices (Symonds, 2014). However, in 2012 a reform movement called *Hmongism*, where it may be that women are treated more equally is spreading from the USA where it originated (Vang and Hein, 2015). Shamans commonly become so after a period of illness, when the spirits ask them to follow the shaman path. As a result, there can be several shamans of varied ages and genders in a village. There are various routes to becoming a shaman; a family tradition, natural aptitude, and illness may bring someone into contact with the spirit world. If you hold a belief in spirits, then there is no reason why the spirits cannot choose to speak to anyone they chose, and perhaps bring them closer to being a shaman at an opportune moment.

Having captured the material and non-material, action-based research would seek some way to archive this for future use and as a cultural repository. This is happening in Ban Mae Sa Mai where there is the QSBG with an attached museum there where one of my respondents worked and educated schoolchildren. The QSBG includes a nursery for growing trees and some preservation of traditional varieties. For example, the avenue of banana plants I explored means that the kind of learning around these plants and use of old techniques is possible.

I did see an element of living tradition, where indigenous people wearing their traditional clothing were employed to work there. My respondent specifically was employed to present his culture and has shared what he has seen in the museum to a wider public by using social media. Specifically I saw him do this on the platform Facebook, and using mobile phones to educate others via digital photographs with discussions beneath them about what was shown. Such actions turned the information dissemination from a one way channel into collaborative, multi-directional learning, which can be described as "*participatory media*" (Tippett in Duval, 2010).

The QSBG could do what we see at the National Museum of Rural Life in Scotland or more local museums such as the Museum of Lincolnshire Life in England. These are social history museums, with a pedagogical aspect within their design, which differs from ethnographic museums and the cabinets of curiosity they sprang from (McLennan, 2006). Social history museums should be contrasted with smaller venues which are often called Farm Museums, which are particular kinds of Open Air Museums (Rentzhog, 2007). An example I am familiar with is the Village Farm Museum in Skegness, here old farm techniques were shown and the workings of old machinery as was used locally, although recently they have "*turned their backs upon and neglect the traditions of the indigenous people of the area*" (Anon. 2016, pers. comm., #18). Proper documentation and recording of the non-material culture is needed so that it can be revived if the indigenous people should gain the opportunity to revitalize their culture in the future or ownership over their own cultural, material and non-material heritage.

Even though there was much material culture, such as street signs, spirit guards and other artefacts, in my research locations I was not able to see any useful techniques that I could describe in a way that seems relevant to this thesis.

4.2 Sources of learning

4.2.1 Family

Family as a learning channel

Family is the expected source of learning for most people outside the formal schooling system. Research in Australia conflates "*family, friends and co-workers*" and finds them a significant source of learning for adults (McIntyre and Cross, 2003). In the case of agrarian, village-based existences where people work on their own family's land, they often have less formal schooling and are less assimilated into the Central Thai state so family are even more likely to be the dominant source of learning. This is the case with many hill tribers, who are marginalized and not socialized into other sources of learning. It is hard to say how much a given adult or child conforms to this general pattern with family and clan backgrounds giving an indication. Traditionally within Hmong communities, the family was the prime source of learning (Detzner et al., 1999). Hmong who were merchants' children (Cha and Dunnigan, 2003), or "*the eldest or brightest boy*"(Weinstein-Shr, 1993:276), were found in the Hmong diaspora that had immigrated to the USA to have had more formal schooling away from the family than others (Weinstein-Shr, 1993).

Many of the Hmong in Thailand come from a non-literate cultural background. Strong gender rôles that defined who would teach what, and who would learn what, further restricted possibilities for learning. Till the 1980s, there was much less interaction with other ethnic groups and locations by Hmong and Lahu than present day. Now there is much more interaction and a broader repertoire of learning experiences are available, whether via increased ownership of transport like motorbikes and pick-up trucks, more job opportunities in urban areas or increasing Information and Communications Technology with Computer and Information Technology that allow possibilities to be realized. Now children are exposed to a greater variety of non-traditional learning sources and to a greater extent too. Historically, fathers who undertook business and interactions outside the family had more varied learning opportunities while women and especially children were less likely to be exposed to alternatives to clan and family-based learning (Peng, 2007). The definition of a family from a Hmong perspective is wider than the nuclear family. The term *tsev neeg* "*need not refer only to those who live in one house, but rather includes any persons under the authority of the householder*" (Weinstein-Shr, 1993:274). The tsev neeg is not the same as a clan (White Hmong term: *xeem*).

Karen have interacted more, for longer, but the cultural nature of Karen society has meant that individual Karen, like the Hmong have learnt more within extended family-clan relationships than other sources. It is important to note that, "*At different points in history, different Thai, foreign, but also Karen authorities constructed the Karen for different political purposes as a peripheral/marginal/excluded minority group. Therefore, labels like the term 'Karen' … are highly problematic. Despite shared cultural traits, such as village structure, housing style, language and clothes, these traits always have to be related to the historical and politico-economic aspects of peoples' lives and livelihoods and cannot be pinned down to constituting a clear 'Karen identity.' … It is necessary to locate Karen 'ethnicity' in the broader frame of political economy of northern Thailand*" (sic) (Vogler, 2010:89). The children of today, in Karen societies, would have learnt from the family less than the adults of today would have in their childhoods due to increased participation in formal schooling (Vogler, 2010). Karen households reportedly now follow the nuclear family delimitation and are matrilocal (Vogler, 2010). Lahu children in Thailand are subject to the same political economic forces and state pressures as

Karen and Hmong. "*In a Karen economy based on subsistence farming, children's working activities were largely organised according to gender and generation.* [but this has changed so that] *young peoples' gendered working activities are nowadays organised principally around their economic and political status*" (Vogler, 2010:144). "*Gender relations of productions have also changed. In shifting cultivation, women are responsible for hill farming whilst men dedicate themselves to rice fields. Women pass on knowledge of the seeds to their daughters. In contrast, the Royal Project trains male employees in agricultural techniques, who then pass the knowledge on to female employees and/or their wives.*" (Vogler, 2010:145).

Traditionally Karen women would have trained Karen girls to cook, wash clothes and weave; Karen men would have had boys learning to plough, keep elephants or guard water buffalo, which are used as draft animals, and to hunt. As society has changed boys are also washing clothes as a washing machine is easy for them to use, more use of tractors and adults spending more time in the cash economy has meant that boys and girls also gathering wood and wild forest products in a more egalitarian way (Vogler, 2010). Gendered skills such as weaving and ironmongery, are vulnerable to loss when market economies out compete traditional kin apprenticeships. This seemed to be happening re weaving, as I saw in the Lahu community, where cheaper cloth for making Lahu style clothing could be bought from Chinese imports.

Early childhood learning

Traditional learning in these populations for children is analogous to home schooling. British research on home schooling shows that "*the far greater part of this learning occurs informally during the simple hurly-burly of everyday life*… [and is] *a commonplace, unremarkable and yet astonishingly efficient way to learn*" (Thomas and Pattison, 2008:20). Home schooling varies quite a lot with some home schooling having collective interactions with other home schooled children in regular gatherings, much like dame schools of the 19th century (Higginson, 1974). Other home schooling is much more free-form, and is closer to personal tutoring or even autodidactic. It maybe child-learner led on a thematic basis with adult support or it may be very directed, by an individual adult or family. Thus generalizing is not possible.

Similarly, learning in indigenous communities has been affected by personal caprice of the family. Commonly parents are the main channel for childhood learning, including traditional ecological knowledge, with grandmothers being a significant channel for passing on herblore (Setalaphruk and Price, 2007). The Hmong conform to this pattern although it was commonly gender delimited, with women teaching girls and men teaching boys according to their culturally defined appropriate gender rôles (Detzner et al., 1999). Yet, this over simplifies, as both parents took part in childcare. Grandmothers and older siblings looked after young siblings whilst others worked (Detzner et al., 1999). There were greater amounts of free time and the structure of life meant that stories, morals and guidance could come from other parts of the family to all members of the family (Detzner et al., 1999). Fathers had a deciding rôle, but this changes with greater female literacy and education since the 1970s (Cha and Small, 1994; Cha and Dunnigan, 2003). The transition to adulthood is different and at a later age in contemporary society (Detzner et al., 1999). Now there is an increased amount of boarding schools and education away from the family from middle childhood (approximately 12).

Children learn best from the family till around middle childhood, when their learning develops to use more executive control which is also termed metacognitive processes or operating at the meta-level. "*It is this executive control that enables an individual to temporarily set aside or bracket existing beliefs and thereby effectively inhibit their influence on the interpretation of newly presented data. In the absence of this executive, there exists only a singular experience—*

of "the way things are"—that serves as a framework for understanding the world. New information may be assimilated to it, but no executive is available to monitor and manage the process" (Kuhn and Pease, 2006:289).

This executive control is related to encoding, particularly elaborative encoding, where new knowledge is organized into the existing self-schemas a person may have (Thompson et al., 2013). Recent research on the brain has shown that words cluster and neurons fire for those clustered close together (Huth et al., 2016), this perhaps reveals semantic encoding, where learning is happening within a framework. This contextual framework may be new, or elaborative. The idea that learning develops this metacognition is called the *Executive Thesis* (Kuhn and Pease, 2006). This *executive control* is demonstrable in some younger children to a certain extent, though some adults have failed to show it in experiments (Kuhn and Pease, 2006). Together both these findings indicate that the Executive Thesis cannot be asserted as a universality with a very high level of confidence.

However, if the Executive Thesis is accepted it shows an augmentation of the repertoire of learning cognitive tools from "*simple associative learning* [with the] *conceptual, that is requiring cognitive engagement* …[whereby] *learning* [will increasingly] *invoke executive processes, as mental resources must be allocated, monitored, managed, and reflected on, as part of the learning process*" (Kuhn and Pease, 2006:292). It is then a more specialised education is needed and appropriate, which often cannot be provided by the family learning environment. Contextual learning and conceptual learning needs a level of expertise that goes beyond mere rote learning. An expert with expertise is then needed to train a learner for effective learning. This fits well to personal constructivist theories of learning which require "*the four essential features of constructivism: eliciting prior knowledge, creating cognitive dissonance, application of new knowledge with feedback, and reflection on learning*" are met (Baviskar et al., 2009:541).

Formal and non-formal learning

Even though the demands of constructive learning typically manifest at about the age of 12 (Piaget, 1971), the UN is encouraging people to send their children at a younger age to forced schooling with its "*Education for All Goals*". Goal 2 of which calls for "*compulsory primary education for all"* (UNESCO, 2015). This is augmented by child-care being provided in many situations, so parents can work, and prohibition of children attending many places of work on health and safety grounds. Such an approach is a legacy of industrialization. In pre-industrial societies, the separation was not so stark. This change in where children are educated, from informal learning in the family to institutionalized formal learning, is due to pressures to conform to industrialized ways of living (Vogler, 2010). I saw some evidence of this industrializing change within the indigenous communities I encountered.

The Hmong families in the Upper Mae Sa Valley sent their children, over a certain age to the village school, so children between the ages of 6-7 must start school at a level called *Prathom 1*. (Thai term: *prathom* meaning primary, in Thai *ประถม*). Some places have Kindergarten provision, which starts at age 4. This means those children maybe denied an appropriate education, one wherein they would gain the traditional ecological knowledge and skills, for the lives they may well lead in the future (Cf. Learning for children and youth). Nevertheless, I saw younger children taken to the fields for strawberry picking and some light work, with their mother.

Very young children who are those aged 4 and under, are commonly not learning in depth about natural resources, though they may have some knowledge they are not commonly working, even in traditional Hill Tribe cultures. Nevertheless, "*much of a child's attitude to learning is established by the age of four and a half*" (Wingfield and Wingfield, 1972) and so it is important for later learning and, "*Restricted space, or surroundings too restrained by adult standards of orderliness, can also 'tidy up' out of existence* [the] *priceless potential of intelligence and enterprise*" (Wingfield and Wingfield, 1972). Children aged 6 and 7 have begun to be active in wild food gathering and to take on work related responsibilities, perhaps for boys having child versions of adult agricultural tools (Cha and Dunnigan, 2003). By 12 "*studies on children's acquisition of traditional knowledge and skills show that children have already learned most of the tasks and skills and there will be minimal difference in the level of expertise of the children*" (Setalaphruk and Price, 2007). I did not see older ages taken to the fields in Thailand, but I was informed that this was typical. One of my informants, Nuori Kisälli, was well educated, worked at the QSBG, and had worked in the fields and forests with his uncle and parents in the past on the land which they managed when a child.

To juxtapose the hill tribers' traditional way of living and thus family-based education with the contemporary ways of learning can be seen by looking at a "*Thai-Lao*" (sic) village population in Isaan (Setalaphruk and Price, 2007). In this part of North East Thailand, in an agrarian village, the parents, in gender-based groupings, traditionally did the child-education. Girls developed a greater knowledge of plants and plant harvesting techniques than boys who developed a greater knowledge of animals and animal related traditional ecological knowledge. Both groups developed stronger knowledge-based around what they preferred to eat. As the society has been under change many of the parental generation have been working away and the education had been predominantly gained from the grandparents (Setalaphruk and Price, 2007).

Though the "*basic ability (knowledge) for naming wild food species remains the among village children* […] *who are being raised by grandparents* [compared with] *those being raised by their parents* […] *the practical in-depth knowledge, especially about wild food plants, shows some potential eroding*" (Setalaphruk and Price, 2007). This relationship within "*Thai-Lao*" people is probably generalizable to Hmong or Karen village peasants in a similar environmental location. I heard evidence of young women and men being absent from Ban Mae Sa Mai studying and working away in cities, which left child care responsibilities with those in the extended family. I also saw groups of boys playing together within Hmong and Lahu communities, behavior indicated in successful peer-to-peer learning about wild forest plants, animals and fungi (Setalaphruk and Price, 2007). Thus there is some substitution of "*channels of knowledge transmission*" from parents to peers and grandparents (Setalaphruk and Price, 2007).

An adult learner

Emäntä Parantaja, a woman in her 50s was willing to show anyone her techniques and had herself learnt much from her mother, who was also learned in the ways of herbology and plant use from the forest. I asked her where she had learnt from. As well as her mother, her husband had also been occupied with herbology and she had learnt from him too. Some learning had come from practice of medicine and she had realized something worked, but had not known it would work at the time she suggested it. This is evidence of elaborative encoding and the executive control of an adult learner. She herself acknowledged this as she had actively learnt as a young adult and not as a child, despite exposure to the culture and concomitant passive learning opportunities by being with her mother. It was because she was in the family context

that she could get the conceptual knowledge. If she had moved away from the family elsewhere, she may have had associative knowledge, but not the milieu to develop the meta-level skills to be an effective healer. Nevertheless, much of the more complicated treatments had come from transmitted knowledge.

I asked if she had learnt from her children or if her children had learnt from her. While there could have been some family transmission, in the main her children had not learnt herb lore from her. She ascribed this to temperament and ability. For her ability to remember was a crucial factor. She found that often she shared in context, but people did not recall what she told them. She told me that she would "*always tell people this is good for what and this is good for, but they can't remember,*" and that she has "*7 brothers and sisters and only she can remember.*" It is likely they lacked the initial associative knowledge to then put with meta-level learning, and possibly lacked the appropriate context-based learning too for that meta-level cognitive functioning.

I asked her if other methods such as writing could be used to help with learning and knowledge transmission. In the past, she had kept many written records and watched television wherefrom she had learnt techniques. When I met her, she was not using any of these methods. Perhaps the death of her husband had caused her to move away from these practices as they were connected in her memory with that time in her life. Her children had moved away to study at higher educational institutes and so her family situation was different. Her mother lived quite close and had been engaged in the same herbology and wild plant usage. Therefore, it could be said, they were both part of a family tradition. The chain of transmission was sadly being broken if her children did not learn. Both of them had earnt a living from this work. I would have thought that this practice was a normal thing, like looking to cook, which most people can do. When I asked I found this was not so, she was a specialist called *kws tshuaj* meaning herbalist (Cha and Dunnigan, 2003). Like any other trade, not all Hmong women or men had these skills in the present time.

Emäntä Parantaja had learnt much from her mother, but when I asked if it was a female or male tradition, I was told that it was not gender specific and anyone might learn, male or female. Indeed Emäntä Parantaja herself had no discrimination nor feeling in preference for or against either gender. She had learnt from both parents and her grandparents to a lesser extent. Her desire to learn as a profession had come later and most learning from this time came from her mother. She still valued the work and thought it worthwhile. Others have reported herbal knowledge, especially for healing, has been predominantly via female transmission so this could indicate a change in gender rôles in Hmong society or a lack of awareness of men's herbal knowledge.

The community as a knowledge community

A slight difference from how people may expect her to be toward her profession was her approach to knowledge and others learning it. She did not hold to the concept of it being protected or forbidden knowledge, quite the contrary. Emäntä Parantaja regarded the knowledge as a commons that anyone can gain and which could be freely shared without restriction. To me this did not seem wise, as the commons could be enclosed by others without some kind of protection over it making it no longer available. There was a risk of harmful results coming from poor application of the knowledge and it was better to be in a community of practitioners or a family tradition that could cherish and keep custody over the knowledge as a coherent body.

However, she had more of a hacker ethic (Raymond, 1996)and open knowledge viewpoint (Molloy, 2011), perhaps mediated by her Christian beliefs. Her mother who was a Catholic was slightly more of the opinion it was a source of money, had to be considered in that vein, and perhaps was not so free in sharing it as Emäntä Parantaja. I was not able to explore the origins of the differences further. Maybe this was a generational difference, both of them made money from their professional herbal knowledge. They were of different Christian denominations. Emäntä Parantaja's mother grew up in a household, which followed the tradiational Hmong kevcai practices as a kevcai religion. These differences may have led to different family habitus (Bourdieu, 1990) and thence the differences, in respect to learning and knowledge, they had. Perhaps it could be ascribed to some other factor, such as personal political beliefs though I could not meaningfully explore that nor any aspects relating to variance within the indigenous Hmong compared with Thai culture. Though I cannot rule out any of the above being influential factors, based on my expert knowledge I am of the opinion that if generational cultural factors were to play a part, they would relate to how the Thai state and minority culture relations have played out in the past. So the cohort of the mother's age would have felt oppressed and less inclined to share, so more protective. Whereas her daughter's cohort would have experienced recognition to land title, her children being educated to a high level and respected in her professional and personal capacity in Thailand, which would make them more disposed to openness and feeling less vulnerable to loss of knowledge or culture and thus less need to be protective.

There was a difference in educational histories between the generations too. The daughter had had more education and exposure to a wider range of possibilities. Her mother had not gone to school. Her mother told me that she knew some Hmong songs and that she did tell Hmong stories. For more on White Hmong stories see (Johnson and Yang, 1992). When I asked about a particular story "*the story of the turtle*", neither the mother nor the daughter recognized what I was asking about. Another, White Hmong informant had told me this is a popular story in Hmong culture and that it is not Aesop's Fable *The Tortoise and the Hare* (Gibbs, 2002). To put it in context, it is like a German claiming they did not know the story of Rotkäppchen (Little Red Riding Hood (Tehrani, 2013),cf. Print media).

I asked when stories might be told and was informed that some were told in the evening to children, so bedtime stories prior to going to sleep. Evening story telling has been reported before "*and usually occurs after dinner*"(Detzner et al., 1999). Others I was informed are told in context, and these might be in the forest and relevant to what is happening at the time the story is told. I thought this could be analogous to Latvians who sing songs depending on how they are feeling (Smidchens, 2014), and this has an element of emotional bonding to memories. This means in a context when a memory is wanted, that emotional state makes it more likely it will be recalled. It can be used for learning and thus correct application of a techniques like a work song, which was seen in women's work songs in Tamil culture, where being appropriately dressed for field work, was a line in one song (Ramaswamy, 1993). Most such songs seem to desire the correct meter for carrying out the rhythm of the work for example the Deep South U.S. "*Pick a Bale of Cotton*" or other harvesting songs (Brown, 1953). Memory was something both of them stressed as important for learning re their profession.

These above mentioned differences suggest that there is a different level of knowledge and approach to that knowledge between the generations. These generational differences are of relevance when children or adults are gaining learning from other adults. As a generalization, this suggests that learning better comes from younger, active adults than older less active people. Research in Isaan suggests that such a process is applicable to wild food gathering (Setalaphruk and Price, 2007). My grandmother (Anne Tomkins) as an outlier, who avoided

modern medicine, had good herb lore, kept physically active all her life and lived in a rural area, suggests this is not a given. More research to identify the Anne Tomkinses as repositories of practical wisdom in indigenous communities as stores of heritage and learning should be identified to maximize intergenerational knowledge transfer.

When I looked at the other groups to see if knowledge transmission and learning was applied in a different way within the family I did see that the Lahu village, which seemed more rurally isolated than the Karen village had a difference. The Lahu village had a ceremony with a spirit house construction, pig slaughtering and children of all ages took part in this practice. While the children did not kill the pig, they were close enough to understand and see what was happening. Most children took an active part in constructing the material for the spirit house. They shared in all the processes around it. I did not see children working on the coffee-farm, nor harvesting from the forest.

In the Karen village, a young child (aged under 12) was making earth building construction material. When I asked about child involvement in forestry and traditional practices, I was told that children *used* to be so involved. My respondents had done this when they were younger and had learnt in the family and in wider communal work. They had also taken part in manifestations with other indigenous people. In their case, as their father had been a former village leader it could be argued they did this as a family learning rather than just as a personal desire.

Societal change influences traditional family learning culture

They informed me that the change in their society from outside influence was altering the family transmission of knowledge. If young children had to go to school and this was supported by the families, then the children were not going to be doing work towards the traditional ways that the family had before. Evidence of this breaking down in the society could be seen by what people were consuming food- and drink- wise. They were adopting Thai diets and mores. They were altering to a money-based rather than a locally self-sufficient way of producing their food. The transmission of knowledge to grow your own food and gather materials from the trees for building your own house was disrupted. If you cannot harvest the trees, due to protection orders, then why would the children learn tree-harvesting techniques? If you were only going to grow cash crops to sell for money, then why would the children learn how to grow vegetables for eating or how to harvest other produce from the forest? If the children were going to learn in the school, to go to university, to get a money-based job in the city; then why would you teach them another way of living?

That these things were being lost in the Karen community, in contrast with the Lahu community where they were still living tradition practices, was something my respondents were aware of, struggling to deal with. Suggestions for altering the schooling system, providing alternative educational routes and adopting new ways, such as the earth building and then sharing these in the community were being trialed by them. There had been a direct engagement with the Thai authorities and Odochaw told at the 'Returning Dignity' conference, how the community had recognized there was a disparity in how they behaved and how wider society had viewed them (Lindner, 2014). They had a long history (McKinnon, 2004) of "*working and living in the forest* [while …] *working with outside people … and* [having meaningful]*exchange with people* [who are] *non-Thai* […] *all over the world*" to challenge those assumptions to protect their own narrower society (Odochaw in Lindner, 2014:17). However, the concept of family was not an exclusive one, as might be found in the Hmong society. Rather it was an inclusive one that we are all related. We are all brothers and so there was a desire to share the perspectives and

indigenous wisdom in, if not quite with missionary zeal, certainly a belief that they had something worth sharing that was missing in the mainstream Thai or global society.

There is a pronounced demographic transition in Thailand, and for hill tribes people a slight lag in the transition compared with the Central Thai population. This means a change in fertility levels from 7 or 8 children to 3 or 4 children per woman. The transition does not seem to have reached the levels of parts of Europe of 1-2 children per woman. Schooling, university and a wage economy are helping population dynamics to move in that direction. Family planning has a big NRM implication, static populations that are only self-replacing can be more conservative and self-sustaining on the land they use than can growing populations, which must gain more land to feed themselves or engage in other ways of dealing with the Malthusian question. The indigenous people are becoming peasants and taking the view, of their relationship to an area, of this being our land or our farm. I clearly saw this place-based identity in the Hmong population, less so in the Karen, who are generally are already settled in this way, and even less in the Lahu.

This has an implication for learning as learning at home is reduced. Learning is moving from non-formal, within the family during traditional practices, to formal education and training in vocational settings. However, a farm offers the chance for knowledge and opportunities to be maintained in a location as a family farm. With fewer children becoming farmers, there is less learning from the family and more self-directed learning. This I can see, with the Hmong people deciding to grow vegetables and the Lahu growing flowers who I met. I also saw Hmong people putting straw down to grow mushrooms. In all of these cases, the learning was coming from Thai government sponsored schemes as forms of agricultural extension and not from family traditional usage of these crops. These were diverting people from more forest-based practices to farm-based practices and doing this via agricultural extension services and financial incentives. Agri-business industry played a rôle in this too.

However, there was an entrepreneurial spirit, which was seen more strongly in the Hmong people than the Lahu or Karen people I met. Here the family relationship was a part of this. The Hmong people might be thought of as a bit more influenced by Chinese, mercantile culture than the Karen and Lahu who are more forest-based and more influenced by Burmese culture. While of course individuals from any culture can take any rôle, the Hmong society had also a reputation for being good with money. I was told by an informant in the Karen village I went to "*we can probably learn something about money from the Hmong, because they are very good at business*" (Odochaw Jr. 2014, pers. comm., #33). One of the Hmong people I met had the given name Tsavtxhiaj (pronounced Jiantshian) which he told me "*means that adding money or increasing amount of riches or money.*" When I asked him about money aptitude differences between groups he told me, "*we can say the most of us if we can see the relationship between the Hmong and Karen only, yes the Hmong are better than the Karen, but if you compare Hmong to Akha or Hmong to the Yao people, no I don't feel the Hmong is as good as the Akha or the Yao people.*"

When I first went to Ban Mae Sa Mai, I was offered the chance to stay at a guesthouse that had been built to encourage village tourism. I did not stay there, but in a private home as it; seemed better for my personal security, it was close to the community I wanted to study and as it was offered accepting hospitality would develop a more positive relationship than refusing it.

Nouri Kisälli indicated that his family had been involved in creating that guesthouse. As a result, he was well disposed to the idea of tourism in the valley. He said, "*I would like to see it most of the time I think that if this village can be a tourism place it will be really good, but most of the*

time when we try to do the project the people they were against." He felt that it could be viable as a business and later on has gone on to work in a hotel with the view to gaining experience to possibly set up his own business. Here he sees that the amenity value of the forest is a viable future. There were several things he saw as most valuable for the forested area: biocultural landscape, scientific research, religion and spiritual, and powerful place to be. He saw that if people came, "*They can touch the air or see what we have in the forest.*"

How they would actually do that was proposed as "*We can do, we can make the guest house or we can make them a visitors' centre*". When I asked him where he would learn about doing that he had no clear ideas. However, the ideas had been talked over by his family. They had tried to bring tourism as an alternative to the old way of cutting trees down (cf. Practical workshops, for more on this reforestation and family influences aspect). It would be easy to say that the learning here came from outside influence, he did work at the QSBG, where there was a successful visitor center and he was a guide there. Although learning was mediated by outside actors, village elders and family culture individuals were free to decide what they wanted to do. A tourist guesthouse and for others tomato growing areas, and for others land-clearance by fire have happened, but they seem to have come from family desires which can be independent of the institutional and leadership arrangements.

4.2.2 Indigenous experts

The generalized view of indigenous people was that the leaders are the older males in a society. This view is a patriarchal one and more reflective of the androcentric bias of anthropologists (Stacey and Thorne, 1985) that come from patriarchal societies. There has often been the imposition of this patriarchal approach on indigenous peoples and the ignoring of the evidence that shows a different view of leadership or expertise. Separate gendered space with male responsibility for one area may be called patrilocal but not necessarily means patriarchal (Hanifi, 1971) with its connotations of dominance and overbearing control that various of the four waves of feminism have ascribed it (Munro, 2013). Even where there is some truth that the leadership may be older males, this can and does break down in societies undergoing transition or stresses from other societies or outside circumstances.

The Hmong community has exhibited this dissolution of power dynamics in the USA where younger more educated people have to take a functional leadership rôle due to ability to use the languages and operate in the institutional environment that older males lack (Yang, 1997). Women's empowerment may be changing the Hmong gendered leadership dynamics in Thailand too (Peng, 2007). Modernization, industrialization, formation of the nation state, capitalism and the processes of modern globalization are all stresses that are impacting on the indigenous peoples I met. These also have an impact on their relationship to natural resources, which are being converted from those engaged with via natural foraging and harvesting to ones of exploitation and agriculture. In the face of land-management change, the old ways of learning seem inappropriate and the place of indigenous experts is undermined.

When you want to know about which seed treatment, choice of flowers to plant or the most efficacious usage of chemical fertilizers in a settled existence, then an elder that knows how to spot a suitable tree for making beams, or location finding for a new settlement is irrelevant and not helpful to you. Nevertheless, if another indigenous person does know the new aspects then they are more valuable, so for an indigenous person to gain such skills can be useful. At present, those learning these skills are the younger people, though some of the older ones have also learnt such techniques.

Thailand offers, in addition to the compulsory schooling system, the chance for unemployed people to study on courses to gain skills for a trade. This is limited with the idea being, to support new entrepreneurs, not to create a benefit dependency. Pornpit Puckmai, a Central Thai who I stayed with in Chiang Mai, was learning leatherwork and now produces leather goods, which she sells in trade fairs and through the internet. I also met with Emma Reinhalter of Culture Canvass Thailand, who told me that the indigenous people if in prison could be trained to do their own trade. Many of the women would be trained so they could run their own massage parlors. However, these programs are not really supportive of the indigenous experts, nor helping them to maintain or upskill their existing traditional practices in a changed world.

So are there indigenous experts. Yes there are. I met Dr. Prasit Leepreecha (TsavTxhiaj Lis), who is Hmong. He is part of the Hmong Studies Consortium, which has an international dimension, with many members in the USA. As with many Hmong educated in English, he can transcend being thought of only as a leader for the Hmong and can lead internationally. In his case his main interests have been "*indigenous and ethnic movements in responding to nationalism and globalization impacts*" (Consortium, 2005:1), but he also takes an action-based aspect to his research as he participates in the Center for Ethnic Studies and Development at Chiang Mai University. This department works with many indigenous groups, to keep their cultural perspectives and wisdom from being lost in the modernization of Thailand. This extends to experimental projects for schooling and social development.

I found that while he had an awareness of the other university departments that he was not known personally to the people that I met in the Upper Mae Sa Valley, which is quite curious as he did his PhD research there. He had not been consulted in the development of the forest restoration project that FORRU-CMU was leading there, although he did know of the main village involved. This seemed very strange to me, as the university had such a department specifically dealing with development issues in indigenous communities, and such an internationally recognized expert, yet not to consult him about working with people of his own ethnicity was an omission that I am not able to explain nor justify.

Similarly, there did not seem to be any involvement of foraging experts in the Upper Mae Sa Valley restoration. As I encountered use of herbs for healing in Lahu, Hmong and Karen communities there must be expertise and communities of practice with experts in them that could be so consulted. I met a Hmong expert that had led a group of women in herbal knowledge and saw a place where a Lahu man had been teaching young women about plant knowledge and both of them would want to share their wisdom so it would be possible to involve them. Hmong women are often the ones with expertise in herbalism and there has been a group of such women in Ban Mae Sa Mai (Peng, 2007), so they must be known to the men involved in the FORRU-CMU Nursery and Education Centre, even if they are not directly employed and involved in developing programmes there.

The QSBG and the RFD did make use of indigenous labor, but there seemed to be a neo-colonial perspective present. That is it was not one aiming at valuing all the other traditions in a pluralistic confederal approach. Rather it was a perspective aimed to "*preserve the national culture*" (Coconuts Bangkok, 2014:3), whereby there could only be one culture, which was a narrowly defined Central Thai rather than a pluricultural or even multicultural version. Other cultures and structures were just ignored, in a deliberate ignoring rather than just an ignorant, uneducated perspective. So a worker can present their culture, or sweep a path, but not run the management or make strategic decisions based on their ethnic way of doing that.

The FORRU-CMU did select workers based on the advice of the village leaders. These were older Hmong men, and the worker I saw that got a job at the Nursery and Education Centre was chosen in a way that respected that tradition. I am not sure how much the individual was picked, as would be in other cultures, based on they were the best one for the job in terms of skills, experience and aptitude already possessed. I think they were picked as they came from a certain village, the village nearby had been recently divided administratively into two villages with separate village headmen, the division was partly as a result of local politics, and there was a relationship between the leaders that recommended them and the individual, which made sense within the stability of the village. I do think that the person picked was capable of doing the work, learning and applying the required job specifications.

When it comes to NRM, I attended a retirement-do for Khun Naeng (Naeng Siwapataraprom) (Cornwell and FORRU-CMU, 2012) who can be seen in Figure 4-35 teaching about wild plant use in the restoration forest above the Nursery and Education Centre in Ban Mai Sa Mae. That do was held in the Nursery, where young men looking to mount the career ladder, new workers and old hands were present. All of them could be usefully involved in learning, as co-learners or teacher-learners at different stages. Even a retired person does not need to suddenly stop being involved.

Figure 4-35: Naeng explains about wild forest products in the nearby-restored forest. Source: A day with Ban Mae Sa Mai community nursery manager, Khun Naeng https://www.youtube.com/watch?v=Ym2WqYGx92o Copyright: 2012 FORRU-CMU, James Cornwell.

Naeng was the former Nursery and Education Centre manager. He had been living in Ban Mae Sa Mai since the village was built. He had worked with FORRU-CMU for fifteen years and was there at the beginning of the reforestation process. He had first learnt of deforestation when his grandparents came to the village and felled many trees. Later on, he was involved in the Conservation Club that started which can be seen meeting in Figure 4-36. This began with just some villagers, three of them deciding to do something about the degradation of the local forest. They began to plant trees with no real plans for where they would take the project. They were open to any help and "*villagers who planted trees were automatically registered as members of the Club*" (Cornwell and FORRU-CMU, 2012:9). After planting the trees, they "*had a meeting to discuss about our planting activities and discuss what worked, what didn't, what we learnt from the past and what we were going to do in the future.*" (Ibid.:9). They discussed that "*our club needed a leader, who could be anyone not only a village headman, so even if the village headman is changed, the Club still remains*" (Ibid.:10).

Figure 4-36: Conservation Club in Ban Mae Sa Mai.
Source and copyright: Ibid.

Naeng related that the headman has changed "*4 or 5 times*" (Cornwell and FORRU-CMU, 2012:10) since he has been working with the Club, which implies he has taken on some of that leadership rôle. Which he did acting as an advisor to the Conservation Club in the village, and a second club, which is outside the village but sympathetic to the same aims.

There was a clear direction, which Naeng envisioned with the forest. He began his involvement to create a forest restoration, and then this moved to demonstrating this praxis to the villagers, and then the wider world. There was an aspect of showing that they, which I take to mean the Hmong people, love the forests. There was an element that they have achieved "*90%*" (Ibid.:11) of their aims. For Naeng this meant conservation and livelihoods from the natural surroundings. When watching him talk about the trees (Cornwell and FORRU-CMU, 2012), the ones he mentions are those that can be used for spiritual purposes by a shaman; the large trees, which he admires; a fruit supplying tree; and in passing about 200 different species that they have tried to restore to bring the full diversity of the forest into being.

This lifetime of learning is reflected in his focus of now thinking of future generations. The fifteen years of his development must be related to the work of FORRU-CMU. That FORRU came into the picture, after about five years of the Conservation Club's functioning. The Club members were getting pressure from others about what they were doing. This criticism spurred them to develop contacts with CMU, which led to a FORRU. The FORRU-CMU most crucially brought money so that the Club could have a base for experimenting and planting trees. It brought structure, focus, and employment for some with forest-based livelihoods. It has led to Naeng being filmed and this being made available for others to watch and learn from. This learning aspect could be developed more, as at the moment it does not seem directed at Hmong, but outsider people. Naeng himself has had twenty years of direct involvement in forest restoration and has taken the cultural learning as a collective aspect. There are monthly meetings to keep the focus, which is on restoration, evaluation of the restoration, and a forward development strategy. However, it seems to me the idea is a restoration, not a plan to make more of the forest as a resource, and so additional learning and purposes could be brought in.

Indigenous people typically had less formal education than the Thai people did. At the Suan Lahu farm, I was told by Carina zur Strassen that most had left schooling without secondary education from Doi Mot. Elliott told me that schooling now might be available for all, but that Ban Mae Sa Mai village was growing faster than natural population increase would suggest. He speculated that many moving there were coming from across the borders in Laos and China. I met some working black who had come from Burma. Cross-border immigration into Thailand is a long existing phenomenon. The lack of education of older Hmong people who established themselves in a similar way was likely. Educating both those who had newly arrived and those with longer existence in Thailand could best be done by using the indigenous leaders in that community, rather than trying to rely on the Churches or private education to fill the gap.

The presence of foreigners leading in educational positions and NGOs shows that there are insufficient capable indigenous people able to do those jobs. Partly this is a power relationship as the foreigners often have more money and a perception of deference applies to them from Thai society. Part of it is that the foreigners are better educated. When it comes to indigenous leaders, they are often not given the opportunities to advance in Thai society. I did not find evidence of direct discrimination, but there is lots of evidence of indirect discrimination. The necessity of having gone to the right school, university or having good Thai language skills are genuine barriers.

However, the indigenous people I met who could be leaders, such as Emäntä Parantaja or those in the Hmong Village, the younger people in the Karen village or even the Lahu people, did not have a desire to be leaders in the wider Thai society. This limits them in achieving positions of power or influence outside of those societies, there is thus a restricted sphere in which they are able to be successful on their own terms. Their leadership can however extend in activist aspects.

Emäntä Parantaja was a successful leader in terms of her profession as a healer using herbs. I would say that she was an expert in healing and natural resource usage for that purpose. When she was a housewife she made a gathering, a regular gathering of people assembling rather than a going into the forest to collectively gather plants, although she also did that, and healers could come together. They did this and they exchanged knowledge around plants. She told me it was like a Housewife Group (only women) from the village and "*this Housewife Group knew about herbal and then they cook together*" (Parantaja 2014, Interview:16). I would think that learning techniques here were very similar to how she taught me and some others (cf. Plant specimens). In that case, the others I learnt with were Seventh-day Adventist Reformers and were quite comfortable with her doing this.

Housewife groups are quite common in the gendered relations of the Hmong community, with adult males being elders that decide and run many affairs (Peng, 2007), they are a counterbalance to this. However, I have no evidence that the group of women in Khun Wang was such a housewives' group as commonly found in Thailand for example as reported in Ban Mai (not Ban Mai Sa Mae). In Ban Mai, "*The principal function of the group is dissemination of skills and nutritional or other information, under state run training programmes*"(Hirsch, 1989)48-49. The Khun Wang Housewife Group may have shared aspects of its functioning with the worshiping I observed. A cell church is similar to the house church movement, in that it may grow quickly and then subside again over just a few years. The "*Cell church is a concept which has spread throughout the world. A cell church is a small group of believers who meet regularly for worship, normally in houses. The main difference between a cell church and a house group is the attitude. For a cell church congregation, this is their church. There is also a level of autonomy and accountability that is different from a house group. Cell churches are mission-oriented. They exist to multiply*" (Page, 2004:129). The Housewife Group did not have a mission to multiply, but otherwise fit this description. The Seventh-day Adventist Reformers did have that aspect and fit the cell church description well.

Furthermore, Page says, "*Cell churches encourage intimacy and sharing. Their teaching style is discursive, individual needs and problems can be addressed, and there is a wide scope for creativity and flexibility in worship*" (Page, 2004:130). I found this format with those in the Seventh-day Adventist Reformers. While I was there, one of the members (Marian-Titu Gogoi) and I discussed in German and English about natural resources, the Bible and shared perspectives on wildlife in Thailand.

This discursive praxis had an influence on him as he agreed and wrote a text (forthcoming) after we discussed missionaries and the Christian records of the traditions they had found and published. He and others, despite a strong focus on Biblical matters, had also taken me to and suggested contacts for my research on natural resources, even though this was clearly not a focus of the Seventh-day Adventist Reform Church. This was what was happening with the Cell Church Group. On other occasions, we met Hmong people en route to or from Khun Wang, and there was the opportunity for quick knowledge spreading discussions. These seemed largely to be gossip related and perhaps showed the Church was a network church to some degree.

"*The network church is church based, not on geographical boundaries, but on one or more 'networks'. These networks might be based in the workplace, or by age or gender, or by leisure interests or social grouping*" (Page, 2004:130). In this case, the network would be focused on Hmong people and specifically White Hmong people. All those I met through the Church were Hmong and I think White Hmong too. The Church website only has one indigenous language on it, White Hmong, which includes pod casts and other writings (7sda, 2016). The Church was successful because it was already conforming to the culture of learning found amongst the Hmong people. The group I observed was predominantly composed of women, although in the Church service I attended there was an older man and younger men were met when travelling, they were not core to the experiences I interacted with.

There was a similarity to *snowball sampling* (Goodman, 1961) when asking for contacts, what is the profile of the contacts given? In my experience generally, when asking people for others that can help you with information or research in a snowball sampling way people will connect you to people that are very like them in age, gender, ethnicity and commonly educational level and geographical proximity. They exhibit a personal relationship bias. However, some individuals are very different and have a wide circle of contacts that break all these rules of proximity and maybe different in age, gender, educational level and geographical location. I have met a few of these 'gold dust people'. To some extent this is discussed by Gladwell (2002).

The Housewife Group also made a garden together, but Emäntä Parantaja was the leader. Such collective gardening is known elsewhere in the Hmong culture of Chiang Mai province, with one reported, "*In Maesa Mai village* [where] *20 women cultivated, as a collective, a herbal medicine garden. These women could then pass on their knowledge of herbal medicine to others. Women realise that education gives them knowledge and advantages in society"* (Peng, 2007:94). The garden in Khun Wang was moved to be around the house of Emäntä Parantaja as a physic garden and no longer a communal garden, after it was neglected by the others, when she went to spread the Gospel. She nevertheless became the person to go to for healing in that village. The garden remains and people bring her plants for the garden. She shares plants from it with other people and "*always tells people this is good for what and this is good for*" (Parantaja 2014, Interview:16). There is an element of family tradition, as she does tell her children a little bit (Parantaja 2014, Interview:22)., but her own history of how she became interested, was that she was not motivated until after an illness, and only then did she want to learn herself. She told me that, "*as a young child whenever her family gathered herbs she was there, but was not interested, she did not go when in school as concentrating on schooling. When a young woman after school she got many sicknesses and her mother cured with herbs only. After that illness, she became really interested and really tried hard to remember, she wrote down what she was told by her mother. But she stopped as it was so slow.*" (Parantaja 2014, Interview:4).

So her parents did teach her, and know "*a lot more*" and teach others. Her view was that her grandparents knew and gathered plants, who had also taught her (Parantaja 2014, Interview:4). Possibly everyone in their generation had this knowledge, but did it for themselves and did not teach it in the way her mother taught her. This may indicate a tradition that is dying out. She has also taught others. Partly because of this I would say, she is not pushy with others, but has gained the desire to share her knowledge rather than just practice it. She does teach younger people in the village if they are genuinely interested and approach her. Those with money are expected to pay and those without can get her knowledge for free.

Emäntä Parantaja believes in open knowledge. She thinks that plants should be thought of as this one is good for this and this for this and not that you "*mix them in one big pot*", which

would be stupid. This is a different approach from how fungus foragers approach foraging fungi. In European cultures the common practice is that, you should learn the most poisonous ones to avoid them and at the same time, you learn the most common least risky useful ones. This cultural viewpoint extends to wild plant gathering, where the praxis is to start with easy to gather ones, that is easy in terms of preparation and harvesting. Only later on should more tricky plants be harvested (Kallas, 2010; Chisholm, 2013).

Learning is a little more nuanced than that in praxis. There are learners that learn within a culture as children, as I did. In the past wild food knowledge was gained from older people by children accompanying them on foraging expedictions. Learning was transferred to the children about the whole plant life cycle. Education was utilitarian and embedded in context with practical based experiential learning. Learners would gain discernment over when and what to forage and subsequent food processing so edible products resulted (Kallas, 2010). I teach my children in this way and tell to them about any plants, not just wild foods.

I experienced hospitality to strangers with the Hmong people, where there was an expectation, I would be given food and shelter, even though I had not asked for it, it was offered, and in return, I would share my knowledge and learn about the people I was with. I call this form of hospitality *xenia* (Ancient Greek term: *xenia* meaning hospitality, in Ancient Greek: *ξενία*), which contained reciprocal obligations between guest and host (Antonaccio, 2016). This may also extend to sharing and explaining about the host's culture and thus an educative element is present. Specifically, I was shown food preparation and taken to sources of food, not supermarkets, but wet fish and vegetable markets. Although techniques were not volunteered to me, when I asked to be shown both Central Thai and Hmong people, were willing to show me how food was obtained, prepared and served.

Novices who have not grown up in a foraging family are more likely to follow the common edible and watch out for the poisonous plants method that the Tenets of Herbal Medicine espouse (Chisholm, 2013). Seeing plants in a more multipurpose way, as Emäntä Parantaja did as useful for a certain purpose, and not a false dichotomy of "*good safe or bad poisonous plants*", is something more experienced foragers develop via their plant usage culture practices. This process of learning plant lore, discriminating between edible wild plants, poisonous plants and medicinal plants allows a more nuanced use of the false dichotomy of good plant bad plant for learning purposes. The dichotomy can later be superseded by more advanced knowledge such as that, the same plant may have parts that fit more than one of these categories, that a plant must be considered in combination with the whole diet, developmental stage and proper preparation for its planned usage (Kallas, 2010).

This way of learning the poisonous with the useful for novices is exemplified in the criticisms of Christopher McCandless, which rely on a view that he had not gained enough knowledge to avoid poisonous plants and so died (GhostbustrsKeyMaster, 2014). So in Emäntä Parantaja`s world view there are not poisonous and safe plants, but rather there are plants useful for this or for that purpose. Therefore, learning is dependent upon need for this and that purpose. This is akin to views that many people in Western society rationalize about drugs and alcohol, that they are not bad per se, but rather abused and that it is this inappropriate use rather than their existence which is problematic. A community or active culture of learners and practitioners is required for learning, not just an individual with a whim is the reasoning that has some validity. *Cooperative learning* is more effective than *individualistic learning situations* alone (Johnson et al., 1994).

Emäntä Parantaja is also in a community of practitioners. She learns from other healers, "*they exchange knowledge*" and "*Sometimes she went somewhere and she saw them give and just like that*" and "*Sometimes she went to the people because she knows and just exchange … wisdom*". Therefore, there is an informal network of healing and healers, which may well be parallel to mainstream medicine. I did not explore the interplay between mainstream medicine and her healing practices as it was not the focus of my thesis, but it, hospitals and doctors were mentioned by a Karen indigenous person when he gave me a healing leaf for a headache and told me "*there is no doctor you heal yourself*."

Most successful of the activist leaders I met was Joni, the Karen leader. He not only was a leader in his community, but also had stepped beyond it to be a leader to many indigenous people. This had been done in a way that was empowering of himself, his community, but also the wider society. Here there was an aspect where he did "*think of the greater good*" (Coconuts Bangkok, 2014). However, his utilitarianism would be a humanistic one, and others' greater good might be more that of one that did "*Uphold the interest of the nation over oneself*" (Coconuts Bangkok, 2014) with a focus on the Thai nation. When it came to NRM, there seemed an absence of leadership in many cases.

Thus, zur Strassen was able to step in with her organic school, while she worked with Jakatae; he gained knowledge from outside his Lahu cultural world. Jakatae has acted as a leader not only to other Lahu people, such as his elder brother that now works at Suan Lahu, but as an entrepreneur at Farm Life. He is leading others from other ethnicities when he shares his wisdom.

Figure 4-37: Jakatae Jayo explains planting and sharing knowledge. Source: Jakatae Farm Life https://www.youtube.com/watch?v=VQLGymDFP3o&feature=youtu.be Copyright: 2015 Luke Defestano.

He humbly puts it thus, *"Farm Life is Sharing. We learn something together and do something together. I don't know everything, but if you come. We can share, I want to hear your idea and I can share my idea with you, keep doing together and learn something together*" (Defestano, 2015).:2 and he has an open body language and winsome smile to bring about a happy atmosphere and charisma to pull it off as can be seen in Figure 4-37 and Figure 4-38 respectively.

This co-learning approach reveals the independent way of working of Lahu culture, but also shows that Lahu take and build in other cultures knowledge quite freely. This autodidactic process of self-evaluation, rather than by leaders mandating or otherwise for the community was reported by Pine in Pine, (2013).

The other farmers and people who came to the Daweyo Bamboo School took wisdom from it, but their relationship was not one of it being 'our school' or a school led by their leadership. Rather it was client relationship. Elsewhere in the village of Doi Mot, the leaders carried on doing their own spiritual and village leadership aspects. It is recognized that the chemical agriculture was not suitable for the poorly educated villagers of Thailand (Pine, 2013; Nikora, 2016). The work of zur Strassen, Jakatae and others are providing the alternative example, of profitable organic agriculture as demonstration coffee farms in the Lahu community, and with the schooling and sharing they are doing providing a way out that allows survival in a new way (Pine, 2013).

Figure 4-38: Jakatae Jayo presents at Fairhaven College. Source: The World Issues Forum with Jakatae Jayo: "Economic adaptation, identity preservation - a Lahu Na Shehleh case" https://vimeo.com/77234234 Copyright: 2013 Fairhaven College, WWU, Judy Pine.

Herbals, as treatments for over-exposure to pesticides exist in the Lahu community too, which Jakatae was sharing knowledge about in lectures and to those that came to his village (Pine, 2013). This has not been so transparent for several reasons. Thailand as a country is dangerous for those that lead against vested interests. Many environmental activists have been killed and one indigenous leader was pronounced missing while I was studying there. As a result, leaders only lead within close communities of trust. When it is something like harvesting from forests or trees in possibly protected areas, they are even more circumspect. The Sheleh Lahu also have a different way of leading, which is by example rather than calling people together and setting cajoling them (Pine, 2013), and so cultural barriers make leadership skills take a longer time to learn and apply effectively.

When I took part in the fire break burning in the Hmong community, I could take part in the work party and see the mechanics of the clearing, but I was not able to attend any meetings for planning nor to see who decided nor how they decided which plot of land to clear. I have no indication that this clearing was not part of a planned protection for forest restoration, but I have my suspicions that it was being done for later burning of an area for crop growing nearby, that would also be burnt. As this was theoretically in a national park, it is understandable they would be mistrustful of anyone official or not so well known to them.

However, though some of these people may not act as leaders of widespread movements, they may still have a great expertise. Emäntä Parantaja for the Hmong was clearly an expert and respected for that by those inside and outside of her ethnicity. The elderly Lahu man who was teaching in the organic farm was an expert, who felt confident enough to approach zur Strassen ask and then run sessions there. In Ban Nong Tao, the Karen I met had learnt about earth

building; other techniques in health from plants; agriculture and organization of society; and World Wide Opportunities on Organic Farms farming. They were then teaching to other foreigners, Thais, their own villagers, and me. None of this was being done with a driver of monetary gain.

This sharing of expertise can be seen with others across Thailand, and is found most strongly where foreigners have not been involved. Sadly, when foreigners start to become involved they often regard the people as poor and want to help them. That help often is in the form of money and which changes the relationship. Where once an expert might have shared his musical talent or another shown you how she gathers resources for making a meat substitute from the forest - just to show you, now money becomes expected. Once money is offered, it is hard for someone to refuse it. In a similar way, university offers "*many traps*" (Jowalu 2014, pers. comm., #27). While the Karen people I worked with valued the wisdom from universities and were willing to share what they knew with CMU, they were wary over aspects of any interaction with formal educational institutions. Perhaps they would be enslaved by student debt, socialized to behave differently in their communities or taught to value people and nature differently. If their religious beliefs were not honored in the educational setting, then it would be hard to keep honoring them themselves and even harder to found their practice on such beliefs. Such pressure might not come from the formal education, but peer pressure from other students.

These traps change and erode the expertise as what is not valued financially, is not practiced nor shared so much. If I can get modern pharmaceuticals for my illness, then perhaps I am only interested in the foraging aspects of forest-based existences and the same applies to other disciplines. The lines we draw between disciplines were not the same for the indigenous people. Emäntä Parantaja knew about forest resources for food and medicine, but was not so knowledgeable about building from them. This was done by men in the Hmong culture she was part of. The Karen people I met knew about plants for animal husbandry, their own health, earth building and activism (local participative governance).

Perhaps these could be referred to as country traditions. I did not find that they recognized these as cultural anthropology, organic agriculture, forestry and architecture. They could be subsumed under the label of rural studies. However, if we contrast this with rural studies as found in Finland (Hyyryläinen, 2009), is it closer to social and village studies or development oriented rural studies? Does such an academic label make sense? Could it be put in a more vocational way – that they are experts in rural existence or livelihoods? Perhaps closer to living archaeology or living history than a rural science, such as domestic science or domestic management was considered to be when people were taught cookery, housekeeping and tailoring in the 1950s in parts of Western Europe (Duchen, 1991).

Thus, we can identify experts by outside measures, such as holding a doctorate and lectureship with a publication record in the scientific literature. We can also recognize experts as a community of practitioners and that community identifying its own experts. The users of either of these also give credence to experts and non-experts. We can also identify those that live in indigenous ways in indigenous communities. They can be outsiders such as the cultural anthropologists I met in Doi Mot and who had been welcomed by the Lahu people there. Or Peter at the lazy school learning from the Karen or Emäntä Parantaja who was happy to teach anyone who wanted to learn.

However, the ones that I wanted to work with for the Indigenous People's Forest Wiki were younger people who still had a connection and valued their heritage and cultural knowledge. They would have potential to develop themselves and effectively network in Thailand over a

longer time. These I would say, were the potential action-based researchers, who could preserve and live what they had experienced while embedding it in a tradition of praxis. I did find Lahu, Hmong and Karen people who liked this idea. There were Karen people in the Lazy Man School, who were writing down their wisdom and teaching it. The Suan Lahu farm Lahu workers who were teaching foreigners about what they did and ran organic farming courses were open to possibilities too. Lastly, the Hmong man working at the QSBG, shared his knowledge on-line with other Hmong, explained stuff to school groups, and showed them and me around the botanic garden.

4.2.3 Outside experts who are not indigenous in-group members

Learning from outside experts may take place via agricultural extension services. I met a professional agronomist engaged in this. Ole Johansen is Danish, worked in Thailand, but business needs mean that he now mostly works in China, though his office is based in Chiang Mai. The main focus of his work was to sell seeds and seed treatments. As a result, the broader aspects of his work were not focused on indigenous perspectives. However, the companies he worked for have used the Logical Framework Approach (Bakewell and Garbutt, 2005), as a development paradigm and their work has been framed in a development context. This treats the indigenous people as a peasantized population and does not take into account that they may have forest people related development needs.

One difficulty he raised was that although he was well educated and thus seen as an expert, the people he tried to advise or educate were ignorant about much science and this made his task challenging. A concrete example, of this, was the perception that a certain color of seed or seed packet was a determinant whether the rice crop would be a good one or not. Yield figures and even the crop name could come second in his experience to how the packaging aspect of the marketing mix was considered. He also carried more weight as a European advising than a local might, even when they could have comparable knowledge. Partly this was a lack of trust in the government and partly it was the cultural stereotype of superior Europeans.

Similarly, NGOs were involved in Thailand on all sorts of different aspects. This, quite well developed third sector, was quite distinct from the governmental (first) sector and the business (second) sector. While it can be argued some NGOs operate more as NGO businesses, the impression I got was that the NGOs in Thailand were shifting the costs onto the foreigners rather than the client groups they worked with. There was a perception that the people of Thailand and especially marginal people, such as the Hill Tribes, had little money and that foreigners had plenty of money. Often the model that was followed was for foreigners to give funds to come and work for a short time in Thailand. If there was a course, there would be differential fees, with Thai residents paying less or nothing, while non-Thais were expected to pay more.

For me personally, this seemed unfair as it failed to distinguish between foreigners like myself that had little money and those that were quite well off and so was based on racial profiling. It did not take into account that some Thais were quite wealthy. It is the middle and upper middle classes in Thailand who have been quite concerned with developing an environmentalist agenda. These people often have some economic security and interest to develop programs. They also may have connections which lower class working people lack. They benefit from privilege. Those in urban areas, especially Bangkok, benefit in respect to influence and access to rich people. The indigenous people, who are not in urban areas, not rich, not connected with those that do, live lives largely outside of interaction with these elements so can be easily ignored by the mainstream society.

To be a part of the dynamic found in these privileged areas, indigenous people are forced to migrate from rural to urban areas and consequently loosen and lose their local connections. The likelihood is if this happens, they are severely disadvantaged with a loss of relationship capital, and may well do worse than if they had not migrated. To fit in with their new surroundings, they may hide or at least not emphasize their ethnic origins. When I talked with Emma Reinhalter, of Culture Canvas Thailand, who worked directly with some indigenous people and employed indigenous people, I was told that this happened with some of the women there. They would claim to be Thai and not mention their ethnic heritage, even though Culture Canvass was an NGO that was working to empower indigenous people, they would still not feel proud of their own heritage.

However, there are NGOs that do the opposite, and not only mention the indigenous people involved with their work, but are largely run by them and for them. AIPP is a good example of this kind, which takes part in international advocacy and media awareness. They run workshops for effective teaching of indigenous people about their rights.

Specifically, for NRM there are advocates and those that spread awareness of indigenous people and their ways of life, in a way that benefits indigenous people. The audience for many of these groups is the educated foreigner, where much of the money comes from either directly or via various foreign development aid programs. To a lesser extent, the Thai or ASEAN government structures are also targeted, but more the idea here is a synergy that works to influence in indirect ways rather than lobbying. There are INGOs in Thailand that would use more direct lobbying such as WWF and Greenpeace, but the risk of facing legal action means that most of these groups are more circumspect in the ways they approach trying to achieve change in Thailand. Even writing a report that appears to be critical of a company or government official or policy can lead to legalistic processes, assaults and prison time.

Jeff's Journalism

Certain individuals were influential in spreading alternative practices. One of these was Jeffrey Warner, who states, "*I prefer contributing to society by sharing what I learn from smelling both the skunks and the roses.… Media is perhaps the most powerful human-made force on Planet Earth. It in my view becomes most useful when used for the purpose of building social capital via going beyond just reporting on events, but rather delving into pertinent issues by empathetically including everyone in the communication process. This can and will ultimately bring benefit to a global society via empowering people, through humanitarian means*."

Warner did this by his documentary approach to indigenous people. He goes to the communities concerned and gains trust. Having gained trust, he takes pictures and uses these to educate more widely to others about the situation of the people he has encountered. Warner speaks some Thai, is an English native speaker and states, "*People communicate in different ways, although people seem to focus so much on the spoken word.* [...] *Any and all data collection I've done that has required interviews has been done properly with translation"*. Those he meets also benefit from Warner's wider connections, his books and shows. For example, at the UN International Day of the World's Indigenous People he was funded by the Inter Mountain Peoples Education and Culture in Thailand Association (IMPECT) to showcase some of what he has recorded via his Indigenous Voices Project, in Chiang Mai. The people do not benefit specifically from money payments, but rather their stories are turned into meaningful narratives for themselves and others. With meaningful narratives, an engagement is possible via various media to empower the people and to protect their naturally embedded existences. Warner has been involved in print media, films and social media. He has helped to 'translate' stories to narratives that have effects

with forest peoples, refugees from neighboring countries, and Lahu, Karen and Hmong people with whom I co-learnt.

Warner extends this work, not into creating his own NGO with him as the leader, as many foreigners seem to do, but in supporting others to create and produce their own structures and arenas where they can have a space to be effective. Recently Warner has told me of how he is trying to take this process to "*bring this initiative to the next level*". He calls for "*a moment's pause*" in which we can reflect on the "*madness*" of the way our society is going on. We can do that by "*taking a look at who we are, who we really are … where we really come from, it's not the city we're not machines we're not robots but were turning into that, we're becoming mechanized in proportion with the global market... we don't like it...*" He, in a scholarly moment of reflectance adds that "*looking at it from a sociological perspective you are seeing the very same things happen here as in the West that are materialism related … the root of that ... is because people are disconnected from what they inherently need. That is a connection with our natural environment, the connection with each other, it's the connection, a feel, a wholeness, and a connection to the world in which we live.*"

Here he has different audiences in mind with his next phase of work, one of them is the indigenous people and he has as "*an objective to turn this* [300-page book of material from 4 years of work] *into a format that is shareable and useful … if we can put it into a format … film... and bring it into these communities later and let them see themselves before the social degradation fully sets in*". He also thinks, "*it would be great if people from different aspects of this same market-driven phenomenon could use this material to start their own discussions*". He highlights that "*this isn't a unique phenomenon here; this is happening all over the world*".

Clearly, Warner has an action-based aspect to his media work. He is an artivist, action-based cultural anthropologist in the vein of cultural evolution of society, and an effective journalist. This action-based aspect of working with indigenous people can be seen in the past with the Churches and their missionary work, which often in the past valued the indigenous people as well as brought them civilization and Christianity. Warner himself has worked with Christian organizations and highlights that there are "*strings attached*".

Warner's action-based research lacks the collaborative aspect, in my view, as Warner leads it quite independently. Though he is willing to collaborate and is open to cooperations it has not materialised with a group of citizen journalists, as for example Jørn Balther has created with his workshops and activist collective *Media Partisans* in Christiania, Denmark. However, others, other than myself have attempted to do this.

The indigenous-outsider interface

Carina zur Strassen has created her organic farm project and this grew from her anthropologist work in Doi Mot. Brandon Casidy has also been involved in making and developing connections, but so far, this has not turned into any actual structure or clear project other than building his own house and getting an anthropology degree (Casidy, 2010). Here a loose network of collaboration and sharing can be seen as an effective outcome, rather than a clearly identified project relationship. This has the effect of bringing the indigenous people into an international peer network with mutual support from different sources. I did see evidence of this in existence with Brandon and Jennifer Casidy's friendship circles. I saw how this was a positive influence in countering some of the more societally destructive individuals found in that community.

Such an action-based approach has mixed outcomes, it does influence the natural development, and does protect from some of the effects from outside the indigenous community. However, it has largely not been indigenous led and can lead to exposure to culture damaging practices, such as the relationship to money, how others are viewed, and even nature. It is easy to support education so that the people can gain the benefits of modern life, however along with simple education also comes a view of spirits not existing, traditional practices being backward and discouragement of ways of life that do not accord with alternative cultural views over gender relations, and interpersonal violence. An example of the latter is that in Lahu society men and women could be equally physical in hitting each other, and this would be seen as acceptable to a degree that in other cultures would be seen as spousal abuse.

Once these mores are challenged: there are no spirits for example, then protecting the forest that before was respected because of a spirit tree (Thai term: *dong seng*; White Hmong term: *ntoo xeeb*) being present, something the Hmong have, is no longer possible (Siriphon, 2006). Respect for the spirits in the Hmong society was something that FORRU-CMU took into account in their work, despite it being led by scientists who personally are skeptical over the spirit designations. Anthropologists have a unique rôle to play in understanding the interplay between spirits, land protection and thus NRM. The indigenous people would be well counselled to speak up about these elements.

I found that the Hmong people I met did show me some aspects, but for many they were not clear about Christian dynamics, which has split villages in the past. Similarly, Christians in the villages would ignore all aspects of the spirit-believing times and thus loose aspects of Hmong culture included with kevcai Hmong. The orientation and arrangement of houses in Hmong culture is important for sunlight, subterranean water movements and geomagnetism. All these are considered in Western house-building too and even orientation of sleeping arrangements by some. Dr. Michael Chiari, a BOKU lecturer, has a business called *Elektrosmog Messung und Beratung* helping people to be aware of these aspects and counseling them when they have trouble sleeping (Chiari, 2016). Hmong have used the concept of a spirit tree to extend to a spirit forest (Badenoch, 2011). Perhaps this is happening in the wood above Ban Mae Sa Mai to some extent. This is not solely TEK as it is developing and creating a new, wider perspective and area of protection than the spirit tree alone had by blending in another culture practice from a different tradition, to consider now a wood not as in the past just a tree. Yet traditional Hmong settlements would have a forested area above the village acting as a protection forest, so justifying creation and preservation of such a protection forest plays upon that TEK.

In the Hmong case, this has extended to how a plot of land was used. Yet a belief that the spirits were the work of the devil for Abrahamists; or at least undesirable from a Buddhist perspective and had been overcome by trust in the triple gem could mean this consideration of good spatial arrangements with the local topography was lost along with rejection of all spiritually related practices. A difficult balancing act is to use the culture of kevcai and not the religion of kevcai in such a religiously tempestuous environment.

The ordination of a tree or a forest

Stephen Elliott told me of learning of the spirit tree in the area where he has been working for over a decade and admitted in amazement that he had "*never heard of it* [before]". When I challenged some Hmong people as to whether the spirit tree concept had come from another culture, I was told emphatically that "*it is Hmong*" and it is not from another culture that we have it. Elliott and my questioning the origins of the spirit tree have a cultural precedent.

Several eco-activist Buddhist monks called "*ecology monks*" (Thai term: *phra nak anuraksa*) invented a tradition now called *tree ordination* (Thai term:*buad paa* or *buat ton mai*) to ordain trees to protect them (Morrow, 2012). This tradition began in Northern Thailand and some of the monks are Isan in origin (Darlington, 2012), though it is seen as a Central Thai tradition there is probably a chain of religious thinking closely linked to the Thai Forest Tradition (Tiyavanich, 1997). These Buddhist ordained trees, which I saw in great numbers lining the roadside when going to a Buddhist temple, have an orange sash around them. This was supposed to protect the trees from being cut, and was successful in Thailand. This success led to Karen people, who already were respectful and protective to the trees in their environment, adopting this ceremony of ordination. The Karen version was adapted to the Karen cultural context. While I only have a report of this happening, with little detail, I could imagine the format would be closer to a *Karen animist-and-Buddhist* belief, which is not wholly animist, rather than a direct incorporation into animist ritual practice.

There is another report on how a variety of forms came about in Northern Thailand. "*The tree ordination ceremony in Mae Malo* [located in Chiang Mai Province] *was part of a major undertaking launched by the NFN in 1996 to ordain 50 million trees in approximately one hundred community forests already in existence in eight of Thailand's northern provinces. The project, conceived and organized by a cultural elite among Karen and Thai environmentalists, was inaugurated to celebrate the fiftieth anniversary of the accession of the Thai king to the throne. The idea of ordaining trees to celebrate this occasion was conceived by Pho Luang (village headman) Joni Odochaw, a Karen and then head of NFN (Northern Farmers' Development Network, which later changed its name to the Northern Farmers' Network (NFN).*

Joni wished to apply religious beliefs and traditions to sanctify forests in order to preserve them either with reference to Christianity, Animism, or Buddhism. Being a Christian with knowledge of the spirit beliefs of the Karen, he consulted with Buddhist monks — like Phra Manas in Phayao — to learn about the way these monks had applied Buddhist symbolism in the ordination of trees. Joni's usage of the term "buad" for the sanctification ceremonies regardless of invoked religions was primarily a matter of gaining communicative force vis-à-vis the world outside the forests, that is, the majority of the Buddhist population and authorities in Thailand" (Isager and Ivarsson, 2002).

There are several reasons why trees might be ordained. Principally ordination creates the concept of a community forest, which the community then values and protects. Individuals not only are subject to peer pressure, but more significantly fears of the spirits are used in a rites based approach (Badenoch, 2011) to encourage protection by individuals (Darlington, 2012). However, in many cases the threats to the trees do not come from within the community, or village where the ordination is being carried out. It may be that there are outside pressures to exploit the natural resources. Ordination can be used as an act of environmental activism to defend against capitalist intrusion.

Lastly there is the question of territorialization and counter-territorialization (Isager and Ivarsson, 2002). Here the formation of the nation state and the processes from that are taking power away from the villagers and communities that may have existed from before the state existed. As a territorialization technique the political act of ordination affirms the trees as Buddhist, and thus part of the Thai state, and no longer owned or under the power of the ethnic group that before may have claimed ownership or usage rights. This has been the strategy particularly of the Buddhist NGO Dhammanaat, where nationalism and environmentalism play off each other (Isager and Ivarsson, 2002). There is also the use of religion in a political way, with tree protection being seen as a Buddhist virtue.

Counter-territorialization is used by indigenous people, to resist the Thai state taking control of natural resources. The territorialization process seems to involve a stage of designating areas as national parks or with a level of protection. The corollary of such designation is that anyone in those parks is to be stigmatized as criminals, forest destroyers and to be removed (Usher, 2009b), or at least encouraged to go by uncomfortable lives, poor development chances for their communities and some inducements. The counter-territorialization of ordination allows those communities to affirm that the trees and the forest are theirs and not the state's nor under its organs' control (Isager and Ivarsson, 2002). This use of technique and tactics by different political interests is something that can be seen in other activist situations, for example the language, imagery and clothing used by anarchists engaged in Black Block action in much of Europe is now being adopted and modified by the Far-Right for their very different purposes (BAF, 2015).

Leepreecha informed me that for the Hmong all plots of land were connected with a spirit, this is much in the same way that the word for plot of land in Finnish is *tontti* and on each plot is believed to be a *tontu* – variously translated as dwarf, goblin, elf or little person. This being known to well-educated scientifically-trained individuals, like Leepreecha and Elliott was not well communicated to others. It could be better so done.

4.2.4 Learning directly from nature

Nature should be the inspiration for NRM, but the more separated we are from nature the more we look to our cultural legacy and knowledge we already accrued rather than operating in an observational mode. If we consider the way that Western naturalists have approached nature, we can find that significant work in the less mechanistic view does exist as seen in (White, 2011). Therin a way of looking at nature, as a practical interaction with life on an observational basis, which can then be applied; rather than looking to apply theories and test them to nature, places people in a very different relationship can be seen. We are thus a small part of nature rather than the controller of it.

I wondered if I might find this kind of romantic, and romanticized relationship with the indigenous people I met. With the modernist trend of peasantization, this relationship is largely not present. As people move to agricultural practice, adopted from other cultures, they adopted those other cultures' ways of treating nature as something to be controlled. Control is achieved with polytunnel-cultivated tomatoes, black-plastic growth forced flowers and tar-McAdamised roads for the transportation of the agribusiness chemical treatments, which are fast becoming standard. At the same time, the relationship with nature has been distanced and interaction with it is based on money. Harvesting takes place in the spirit that crops are money lying on the ground to be picked-up rather than an extended part of our family to be cherished as giving us nutrition.

This monetarized view leads to the thousands of Thais travelling around the globe to berry-pick in remote Finnish, Swedish and Norwegian forests (Yimprasert et al., 2010) with little care or awareness for the local cultures encountered upon migration. The pickers' main motivation is to pay off the debts from the agricultural suppliers of the fertilizers they have bought on credit, which are now poisoning in a Silent Spring (Carson, 2002) way their once verdant and food secure self-sufficient villages. When asked about the dangerous results of poor use of chemicals, the common response is that, they don't know, but now the water is poisoned and no longer drinkable (Nikora, 2016) or the plants are not safe to eat, but they can get a good price for the produce in the market if they are big (zur Strassen 2014, pers. comm., #20). This narrative dovetails easily into the environmentalist and development discourses that somehow the people

not living like this have simpler lives or are in some kind of arcadia that is being lost and should be defended.

A look at the rural areas of Thailand shows that many of those in them are scoring lower in IQ tests than in other parts of Thailand (Draper, 2011). There appears to be a lower level of educational attainment prevalent. Perhaps educational attainment is related to the standard of food, whereby malnutrition has been identified, and of pertinence is the iodine deficiency in it (Draper, 2012). There is a worsening food quality with a transition in diets (Banwell et al., 2013). Diets that are more traditional are better (George, 1983b), but also related to more physical work (George, 1983a), which is more connected and embedded in nature. Forest peoples live differently to peasants or urbanites. So now, people are not generally learning from nature, but in the past is there any evidence that they did? Are any of the peoples that I met still learning anything relevant from nature re NRM?

Emäntä Parantaja, who specifically can live off the forest alone and makes her livelihood from it, would have been the most likely candidate to find evidence of learning from nature. I asked her directly about this. Her translator translated her history thus, "*she had once worked in the fields and she had to use a lot of chemicals, pesticides. She saw that the people got so ill and she believed in God ever since she was young and she wanted to help people, heal them. Her parents they had so much knowledge about herbal and vegetables and it is like heritage to herself so she learnt from her parents. She aimed at just helping people. She went many places to spread the Gospel, talked about herbals, and took herbals with her. She would give to people. If they have money they pay and if not, they do not pay*".

Her view is that God is the creator and wants them to live. She said that, "… *every herbal and every plant are really unique they have their own special quality, but healing also depends on their belief, their belief that God helps them. The recipient needs that belief and then they will be healed*". So for her learning came not from nature, but the perversion of nature. When she saw the interaction between chemical agriculture and people's health, she thought about different ways to live. In this case, her motivation was the sickness of people. She then went back to the traditional ways of living that her family habitus had brought her up with. Her parents were instrumental in giving her the knowledge to do this rather than nature. Originally, though an observation, of non-natural ways, provoked the thought to make a comparative judgement. Further learning did come directly from nature.

Learning directly from nature can also be done by keeping your own herbarium. Emäntä Parantaja kept a store of plants in her house. When I asked if she kept specimens for her own reference it appears in the past she did. She took specimens (within the last decade), had put them into plastic bags and gifted them to others, with pieces of paper where she had written the use and the instructions on how to use them. It seemed this approach was a gift for learning and knowledge dissemination in the wider community as well as serving the function of a prescription. This practice follows more of an open knowledge paradigm and is in direct contrast to the trend (Oxtoby, 2012) in Western medicine where, "*Wherever possible you must avoid prescribing for yourself or anyone with whom you have a close personal relationship*" (General Medical Council, 2014). In the past, she had collected some plants, together in her own plant collection books, with notes, but felt that this was not a good approach. Better, she felt, was to see them growing in their right surroundings and thus this is how she would learn from them. Rather than learn directly from them in an isolated situation, I believe that this put the plants into a context. It allowed other learning experiences to happen at the same time and a deeper learning was possible.

Some of these other learning experiences from this context-based learning are the following:

Plant Associations

Plants when ready to gather for some purpose are growing near other plants, which although they may not be desired, will be encountered at the same time. Thus, plant associations are learnt by observation during these encounters. Knoweldge about shade loving, light demanding, or moisture levels are absorbed along with many aspects of topography, plant life-stage utiltarian aspects of how and when to forage for a variety of crops, not just one target plant. This context will not happen if plants are removed from where they are naturally growing.

Harvesting Control

Learning the cropping amounts and not to crop too much of a particular plant happens from regular trips to the same part of the forest. For example, I know when it has rained and the temperature feels right that there is a higher chance that I will find chanterelle mushrooms growing in a suitable location in forests I know in Finland. I know how much I can likely crop and how often I can go if the weather is a certain way for certain berries.

Phenology

Tacit knowledge of where a certain plant might be found and when it is right to harvest it, was known to Emäntä Parantaja, mainly by direct observation in nature. Thus, it is possible to learn the phenological effects of plant changes and association changes over a season's wandering through a forested area.

Storage and Preparation

Plants once removed may degrade; active ingredients may also not be the same and need to be stored. If they are in their natural surroundings this issue is not relevant. Despite this, plants were gathered for future use and not only for immediate use. So gathering for use compared with gathering for learning were not the same.

Phenotypic variability

Plants can also look different in how they manifest according to local microclimates, variable genetics and other factors. By seeing the plants in their environment, they are seen with a wider phenotypic variance than if they are looked at from a book or single specimen. Though the specimen can be typical, it does not show the population variance of a species. Perhaps a species is clearly described, but varieties within that species, which conform to a different folksonomy than the systematic Linnaean scientific taxonomy, are wanted. A type specimen, which has been used for illustrative purposes, may not reveal the pertinent features so well as comparison of several specimens in situ. Thus, taxonomy is not based on a typical individual, but a spectrum of individuals.

Environmentalism

By being in contact with the natural forest, after working in chemically treated agriculture, there is a juxtaposition, which allows an assessment of the condition of the forest. Emäntä Parantaja said she thought that the "*forest is in a bad state*" and that she would like to see it recover. I found out that she did do some planting of useful plants, but that really she thought it had to

recover naturally. Her practice here could be described as *leave it alone management* or *close to nature management*.

I did not see the Karen people learning from nature to the same extent, but they did have a worked-out cosmology that shows they may have learnt from nature in the past. The Lahu people were learning from nature, (cf. 4.3.3).

Memory of the Forest

What I can reveal is that the plant specimens I was shown are commonly used on their own in the main, but a few may be mixed with up to at least four others to get the right pharmaceutical balance. So formulations are made whereby plants work in combination. Preparation and harvest times were said to be significant. To learn these aspects came from many different sources and groups. They also relied on a good memory to be able to 'read' the plants growing in an area and thus select appropriately for a cure. Memory consists of several components, so to be effective learning must put that information about the specimens into the long-term memory and then it must be retrievable in context.

So long-term memory storage is required, which may happen via repeated exposure to a specific location. So my informants that wanted a healing leaf would have learnt where that leaf could be obtained in the landscape, in the case of a Karen man in Ban Nong Tao, from a particular tree that I was taken to, without hesitation, by repeated exposure to it at certain times and purposes. I think this would have been when ill, or relatives were ill, and would have meant *episodic memory*. However, for a professional that can need the leaf in different locations and may not find it in the same place then *semantic memory* would be needed – this would be reading the location. I am sure that this happens from self-observation, as I have collected fungi in the same forest area. While the chanterelle mushrooms do not grow every time at the exact same spot, they do grow in similar conditions.

So those that do have that skill to say, "*Enough looking now!*" are reading the landscape, they are not relying on episodic memory, but on semantic memory. Semantic memory and episodic memory together are called *declarative memory*. There is another kind of memory, which is *procedural memory*, thus the efficiency with which I harvest the chanterelles is dependent on the procedural memory. Procedural memory strengthens with the frequency of carrying out a task, to lead to faster more accurate co-ordination. It may well be that certain plants are not found in one place so knowing where to look for those particular plants is important. A knowledge that varies according to not only location, but also the particular weather conditions found over different years in that climatic environment. Memory can be applied to broader forest management aspects too.

In the case of the forest in Khun Wang, Emäntä Parantaja could read the forest as a whole and say it was in a poor condition. She was able to generalize from frequent visits and to recall it in better times. This means she was accessing quite full episodic memories from the past. There could be an element of *nostalgia* (thinking more fondly of the past than the present) in her thinking the forest was better in the past. It could also be mentally seeking for things to be closer to a concept of perfection than reality is (German term: *Sehnsucht*) or being maudlin over transience and change in the forest (Japanese term: *mono no aware*). Another possibility could be her age, as people get to certain ages their mental processes change, and one change that can happen to women or men of the age I was discussing with is that they become stronger in their belief that their views are correct and this intransigence can manifest as conservatism and perhaps scorn for the current situation. It could also be a cultural expectation and expression

that the before times were better. It is not easy to rule out these possibilities, but if she truly is being objective, which is indicated by her pointing out other things that were worse in the past in a similar way, then she is taking episodic memories from different times and comparing them, from outside of the forest.

This has important implications for learning for NRM. If someone is able to recall episodically, they must be able to read the forest and store a *visual memory*, or *encode* it in some way. That this has happened over several occasions and then can be recalled and contrasted in an abstract way means that several capable old indigenous people who frequently went in the forest years ago could collectively assess a forest for its condition in a restoration project. They could give indicators as to what should be found in terms of biodiversity, species mix and distribution. We can also use this information, if they have enough experience, to predict how a forest will turn out and perhaps take silvicultural measures to engineer or prevent a likely future outcome. It seems this *memory is holistic* rather than made up of different elements, though it may depend on what kind of memory she has, as some people have a *phonographic memory* and some people a *photographic memory*. I think she has elements of both, but a stronger photographic memory, on the basis she was not able to speak any English, but was able to recognize how things looked very easily.

Knowledge came for the more difficult and unusual treatments from other experienced practitioners, rather than from magazines or television or specialist books so there must have been some oral learning. However, when asked how she knew which treatment, that knowledge came like from a voice in her head rather than a picture in her mind. This is something that Temple Grandin has explored with regard to *visual thinking* (Grandin, 2009). It is an interesting phenomenon that she cannot recall how she knows. This is something that is found with *retrograde amnesia*, where a person can do something but does not know how they can do it and cannot recall learning it. The thing is not something they learnt when a baby before they could talk. It could be that she is consolidating memory of the significant things, but not the context of where she learnt something. It could be that she is creating new thoughts. Testing this is not easy, and I was unable to explore this aspect more.

Some further aspects can be revealed that depend very much on circumstances. When I talked with Emäntä Parantaja in Khun Wang, it was revealed that learning about plants had happened between other practitioners from varied cultures. When I revealed that I was part of a herbologies and foraging network then they were forthcoming and we were able to share knowledge about plants as forager-to-forager. This personal disclosure is one of the techniques recommended in order to encourage conversation (Murphy, 2003). It also revealed that I was a foraging peer and thus peer-to-peer learning was appropriate. Trust was gained, but later verified by my revealing knowledge of plants from my own culture, which did not appear to be in Thailand. Photographs were able to prompt peer-to-peer learning, when I showed these from my own culture. Someone that looked ill to Emäntä Parantaja was offered, via me, some treatment and a suitable specimen given.

Other aspects found were, one time when I was slightly ill and given a plant, but also shown where to get the plant from and how to take it by a Karen informant with the comment "*there is no doctor*" (Jowalu 2014, pers. comm., #34). Here medical need was the prompting of the learning experience and not merely demonstrated curiosity. If I had not been ill, as when I visited the Lahu people, then the need did not arise so the learning experience was not offered.

Some of the Hmong people I met were Christian. While they still needed to eat and thus must work there was an aspect of Christianity that may be denominational and closer to early

Christian practices and its anarchic roots. Early Christianity was an underground movement of radicals and liminal with a militant non-conformist attitude. Militant does not mean necessarily militias, although the Christian inspired riots in Egypt that led to the destruction of the Ancient Library of Alexandria and the death of Hypatia indicate adherents could be violent (El-Abbadi et al., 2008). Rather militant is meant in the sense of resisting in an activist way, by creating an alternative community of solidarity, outside the control of the state. In this instance, the Hmong I met had rejected Catholicism and mainstream Protestantism; instead, they were Seventh-day Adventist Reformers. This meant they were closer to the house church movement, where personal relationship and self-actualization of religion is more prevalent than, found with a hierarchical priesthood. Self-revelation and their approach manifested sharing in a spirit of solidarity with learning mediated in a distributive way. While this may be the case, analyzing if this was causative, correlative, or determined by the Thai or Hmong or Church culture is not easy. In this population, it was correlated.

I heard some discussions around food and its origins from natural resources. Food preparation, food storage and food consumption easily lend themselves to talking about factors such as taste, how well the meal meets expectations, and with foreigners how it compares with the food they are used to or have encountered before. In my case this was extended to food provenance; so local sourcing or not of food, local harvesting locations and who harvested the food. It also extended to learning about making the food. For me with Hmong people this proved at times challenging as food preparation in large groups seemed to be gendered, with women doing the cooking and preparation of meals. Nevertheless anyone, me included was involved in preparing dining space and cleaning dishes for and after meals. However, when in smaller groups, such as a family, then food preparation was done without this gender bias with either men or women preparing food.

4.3 Learning fora

4.3.1 Learning circle (Lahu)

Lahu learning circle

I did not witness the learning circle as it had been temporarily discontinued due to problems with the way it had been run and changed from its original format. So my report is based on the information from zur Strassen and Warner and the video a still of which can be seen in Figure 4-39.

Figure 4-39: Lahu Learning circle. Source: Indigenous Voices (synopsis) https://www.youtube.com/watch?v=yQZtuasumEg Copyright: 2015 Jeffrey Warner and Jeff's Journalism.

The learning circle was begun at the Daveyo Bamboo School. This building had been built for agricultural extension services (Thai term: s*ong-suem* meaning to promte), which is subtly different from the German or English conceptions. The German conception is to advise (German term: *Beratung*) and this use can also be found in English usage, and holds to the concept of just telling the farmer. In English *extension* has the idea of extending best practice to a wider field and is a little bit assuming that the farmer is somehow inferior in knowledge to the experts so advising. In Thai there is more of the propaganda element, not merely advising or sharing best practice, but proselytizing. In the case of this Daveyo Bamboo School's purpose, this would be apt, as there was a missionary aspect to promoting an alternative, organic view, to the mainstream chemical-based agriculture perspective.

An elder Lahu man who was a forager and had good herblore was concerned that the old knowledge was being lost. Knowing in the community that the woman (zur Strassen), who was running the project spoke Lahu; and was concerned about the traditions and culture of the Lahu people; and was doing things in a different way from the Thai state, he approached her about doing something in the building.

Originally, the aim was to tell people about his foraging knowledge in respect to plants and how they might be used. The format would be that young women would come to him there; they or he would collect some plants. The plants would then be brought back to the school and he would explain their use, plant names etc. As a part of this learning, the young women were provided with paper and would draw and make notes about the plants. These notes were not so much aides-memoires, but a technique for learning about the plants by looking closely while reproducing the images.

However, these herbals, papers with botanical drawings and info on them, were not well stored and not well taken care of. The class proved popular and the good nature of the elder was taken advantage of. Younger and less interested people began to come to the class. They were not so interested in the plant knowledge and parents saw it as a way of childminding. Albeit a good skill to have, much as some look at Kindergartens or martial arts or ballet classes in the West for young children. The elder was weak or generous and found it hard to turn the people away. Perhaps he was also flattered at the success of the group. Intergenerational learning is a good thing and learning styles were also varied. However, differential ability and motivations meant there was poor classroom management.

As the young women got married and had children, their place in Lahu society required them to be elsewhere and they left with little time for or active interest in what they had been learning. The elder began to become jaded, and regard his efforts as wasted and wearing on his nerves and peace. As a result, when I visited the group was in a hiatus and I was unable to meet him, see the group nor any learning materials.

So I do not know how large the group was, how often they met, and for how long, nor how long the events transpired. There was also a gatekeeper effect where I was not able to interview nor meet those involved in the activity.

4.3.2 Lazy Man School (Karen)

The Lazy Man School is based upon the idea of a character from Karen mythology. There are several stories about this "*lazy man*" which were being written down while I was researching in Thailand, and at the time were not known to have been recorded nor published before. This I found hard to believe and difficult to triangulate, but while I was in Thailand I did read that

there was an American project which was recording dances for the first time from one culture, so finding significant unrecorded material would be possible. I do wonder if the stories are recorded in Karen books. Karen people tell of a "*Book of Gold (or Books of Gold and Silver)*" (Stern, 1968) or three books, namely a "*golden, silver and paper book*" (Renard, 2004) which the Karen have as sources of their wisdom.

Various books have been found that supposedly are these books, or have been created to be these books though scholarly skepticism means we should question whether there were ever any actual physical book or writing. It is possible that the Lazy Man stories have never been put together in the form of a collection, as a coherent work focused around an individual character such as others have been (see below) rather than as parables told in a general way.

Karen animist-and-Buddhist belief is a forest-based religion, and this has influenced the praxis of their shifting cultivation (McKinnon, 2004). Rotational shifting cultivation in Thailand is made harder as the process of peasantization and settled accommodation changes the cultural framing and encourages other modes of land interaction. Though the Karen would then learn another way of livelihood, this can only partially work in the upland mountainous areas. The Lazy Man stories can be used as a repository of wisdom, which teaches how to subsist in this environment. The preference for the "*natural*" over "*technology*" even when technology can "*rapidly increase the growing season or the growing … time"* (Odochaw in Lindner, 2014:31) shows the Karen antipathy to altering their ways in the light of exterior knowledge and demands.

The character, the Lazy Man, is an archetype which shares features with the trickster (Hynes and Doty, 1993). The trickster archetype is found in the form of Heyoka with the Lakota people (Black Elk et al., 2008), Loki with the Norse religion and others who use wisdom and slyness to function in their world, for example the Bantu Br'er Rabbit and Ashanta's Anansi the Spider/Man/God of West Africa. Slyness is looked at with ambiguity in both historical stories such as the sagas of Iceland and tales from mediæval monasteries in Alsace that embody the trickster figure in the form of a fox (Simpson and Greenblatt, 2015). A fox in contrast to a wolf. While the wolf is often disastrous, he is usually more brutal than the fox who is canny and uses guile, not force in getting what he wants. At times, this is admired and times painted as undesirable.

A real-life Lazy Man

The Karen Lazy Man has this dual aspect, with people ascribed the name lazy man in reference to this character. In the case that I came across one named as "a lazy man" was a respondent's relative. The man in question's wife had said "*he's a lazy man*" in the course of the story now related, which was told by a man: The usual praxis for settlement would be for elders to scout out a suitable spot for moving to. This could be a spot that had been inhabited 60-70 years before during a previous instance, called *rotational shifting cultivation*, which had been subsequently abandoned, or a spot that had no prior known usage which is known as *pioneer shifting cultivation* (Rerkasem, 1998). The Karen tend to view what they do as rortational shifting cultivation (Lindner, 2014). Thus, natural resources are managed over a period of fallowness. The Karen then move to this spot and clear the land, build structures for living in and settle there temporarily. Movement is not sudden with everyone moving immediately the same day, but a process of preparation and moving property and material, which might take some weeks or a few months.

When a group of Karen had been settled, the usual behavior was to grow useful crops for consumption, medicinal usage, but not for selling as cash crops in the market. Many of these traditional crops would grow with minimal intervention on recently cleared land. In the village where this man was living, others began to grow cash crops, which necessitated more work on the land. More work was needed partly because of the nature of the crops and partly due to a desire to apply modern agricultural chemical treatments. The impetus for this was institutional influence from the Thai state, and not an indigenous endogenous influence, manifesting in the Karen people being integrated into the Thai society rather than existing in a parallel society with their own peasant economics.

This lazy man did not do work on the land he had use of, nor adopt the new techniques which were required for the more market-oriented production approach. As others began to reap financial rewards and develop their home gardens the lazy man was criticized by his wife, and due to being a late adopter was called "a lazy man" who was indolent and not exerting himself where she felt he should. Here there was a gender aspect where the wife did not do the garden work, but the man was expected to. I feel this was a story-telling device as I did see women engaged in gardening in this community. As Karen society is matrilocal this aspect of the wife scolding him makes sense, yet his wife was not very influential in motivating him via nagging and shaming. She despaired of his lazy ways and moaned in vain. In this case, the lazy man was proved right. He was idle but not lazy nor indolent, which also plays on the Karen stereotype of Karen people being traditionally slow.

In time the others had cash crops, but not the useful crops they needed for their day-to-day needs and had been brought into the money economy, they were monetized, ensnared, and no longer independent. When crops were produced in large numbers and market prices dropped, they were put in a difficult position to get the necessities of existence. Yet the lazy man, who only did enough work for self-sustainability was able to support his family directly with food and other grown resources in a greater variety and with more traditional products and plant choices. At this point in the telling, with a longer-term perspective, his wife had changed from seeing the lazy man's laziness as a vice and instead as a virtue of prudence, not serendipity.

This is a position of being efficient and economical with the resources of time, man-power and intelligence. There is no desire to get rich, only a desire to do enough. This is a virtue, rather than greediness that would waste resources. It is also related to a mobile life-style where excess will have to be moved and is costly. The approach extends into other spheres, such as house construction. There is an element of getting resources from within, yourself, your family, your village and your environment and not getting resources from some outside magic power. In contrast with traditional peasant stories such as *Jack and the Beanstalk* from England, the riches do not come from some outside adventurous source, but instead come from stability and staying with the community. Jack, in Jack and the Beanstalk, is similarly a dullard who is tricked by an outside agent, and lacks awareness of money and true value. The twist in the tales is that for both, by going against convention success can come.

The parsimony of the lazy approach

This lazy approach can be seen with eating, when just enough to be eaten is taken from the communal bowls, and if more is wanted, it is taken later. This means a small scoop, not a small bowl or plateful. Similarly, when consuming alcohol, it was done traditionally with one hand with small servings, so that when the hand was shaky no more was consumed. The Lazy Man approach is thus a prudent, futuristic one that is parsimonious as regards usage of resources. Instead of wealth being stored in money or other ways, it is stored in the bounty for the future.

Resources in the form of labor are only applied if they reduce resource use in the long-term in aggregate.

There are cultural parallels elsewhere. For example, English culture has explored the concept of being an idler (Johnson, 1977; Hodgkinson, 2007) and French culture that of a flâneur (French term *flâneur* meaning a dawdler) (Turcot, 2010). However, neither of these is related to NRM. They are more related to the needed space for thinking and creativity in an artistic or even broader sense. They do have merit on their own terms, but they are not instrumental nor premeditated as the Lazy Man approach is.

My Karen respondents were also connected to WWOOF and shared some of the same perspectives as Jon Jandai (cf. The Thai earth building movement). Jandai was also connected to WWOOF with an organic farm run as a "*sustainable living and learning center*". Jandai has also talked about laziness. In his TEDx talk he mentions "*life is so easy and fun*" (Jandai, 2011) and outlines his philosophy, but years earlier he said "*With organic farming, you don't make a lot of money all at once … But you have enough to live on. Most people just compete, try to make money. When you are more lazy and aren't working all the time you can see beauty - the butterfly, the sunset - these things are very beautiful. I think humans are the stupidest animals-- none of the others work 8 hours a day. I just want to tell everyone that they don't have to work so hard -- they can be more lazy. Laziness is the true way to be an environmentalist, to live sustainably*" (Witmer, 2003a).

Jandai came to this realization when he had to work many hours in modern materialist culture with little leisure time. He then thought back to farming life in his childhood, where subsistence could be achieved with less input in terms of time (Jandai, 2011). It has been often believed that the time needed for achieving a livelihood follows the relationship of; most time-consuming, being work in a city-based money-demanding way-of-life; less time-consuming, being that of a rural existence. And then within agriculture the time requirements from most demanding to least being; conventional agriculture, which is money focused; organic agriculture; swidden agroforestry; with the least time demanding of all being spent by forest peoples who live predominantly by hunter-gathering or within the foraging spectrum (Sackett, 1996; Survival International, 2015). This belief has been challenged as not looking comprehensively at how time is spent during different modes of living. Travel time to move to new locations for foraging and or hunting food, may not be well accounted for against time saved by food being grown near to consumption on a farm or tool making time (Bender, 1978). As a result, it cannot be said if the contemporary desire for a more "lazy" way of being comes from the Karen people considering the swidden existence, which is traditional for them, and making comparisons with their own more recently adopted rice farming ways of living or not. For the Karen rice farmers, there seems to be more work in a busier environment as a part of the cash economy rather than when subsistence ones (Vogler, 2010). They may be considering and influenced by Central Thai culture that is reacting against chemical-based cash-crop agriculture, which is a form of agriculture many Karen recently adopted. However, it can be said that an idle or lazy perspective is found in Karen traditional culture (Marshall, 1921) as well as the Isan (Lao) culture, which are geographically proximate.

Lazy Man School

The Lazy Man School is an attempt to spread that wisdom and approach more widely. It is also embedded in the idea of co-learning. Over the wheel of the year, there are certain times when more work is required for food security than other times. At low work times, the benefit of working hard is minimal and actually could be counterproductive. This is seen for example in

traditional Finnish society when after the harvest festival (Finnish term: *kekri* meaning residuum) men would traditionally sleep and women were expected to manage the house and feed them. In Karen society at this post-harvest time, stories are told and plans are made for the future. This is a time of *idleness*, which is the state of not working though having the personal capability of so doing. Then there is less work to do; so it is not being *lazy*, as lazy is not doing work that needs to be done by avoidance; or a *waster*, which someone working inefficiently so that less work gets done than could be done. Perhaps there is an element of being a *slacker*, which is not doing some work, as not having the work ethic to want to do it. So this is the time to learn and improve on new skills.

The Karen I met desired to learn from other cultures, this included a wide range of different methods and sources. A Karen elder, explained that he and his people "*exchange knowledge and learning from you* [the academics and NGO audience in the room], *from everyone, from academics, from science technology … but we still hope that our younger generation, my people and especially my family now … my sons … still working and living in the forest like I do, but then working with outside people … and exchange with people non-Thai we go all over the world … invitation, we exchange we learn and we help networking … that's a long way from the 60s and 70s.*" (Odochaw in Lindner, 2014:17).

A predominant way was to interact with those from other cultures that visited them. Joni explained how meaningful engagement began. "*Before meeting Dr. Chayan, before that time students went into the forest and asked us to join them to protest, but using weapons … But we decided not to join them. That's not our way, we were born to live peacefully in the forest not destroyers of the forest, but preserving of the forest and making living in the forest but when we met Dr. Chayan … because we are peaceful loving people we decided to join this peaceful kind of learning, sharing and protesting …*" (Ibid.:13) Dr. Chayan is the academic that leads CMU's Centre for Ethnic Studies and Development who hosted the 'Returning Dignity' conference. Vicarious visitors are seen within the hospitality exchange culture across the world, with many hosting others, as they are not in a position to travel and still want to gain the experiences that travel brings. That includes myself, as having young children makes hitch-hiking and sofa surfing less practicable for me than when I was single.

While visiting the Karen such visitors from outside would be given hospitality. This meant they would have shelter, food and companionship without an expectation of payment in money for this. This hospitality culture was quite common in traditional societies throughout the world (Antonaccio, 2016). In more modern times we have Pashtunwali which is the ethical code of the Pashtun people, which includes hospitality (Pashtun term: *melmastia*) that is freely given in the mountainous communities of Afghanistan and Pakistan (Momand, 2000). In our case we stayed with our Karen hosts very briefly in Ban Nong Tao and gave a token money donation to support our hosts, but it was not expected of us.

However, for the Lazy Man School to function some payment must be given, this is given in kind by taking part in the work that is going on and thus learning in a useful way, that is also global service learning (Jacoby and Howard, 2014). The equivalent can be seen with some journeymen and carpentry schools where the students are apprentices and they make useful things while learning under the tutelage of a master craftsman to whom they have journeyed for the purpose of learning his expertise (Ericson, 1984). So the chance to do something also means giving back.

In the case of having knowledge and wisdom, what seems like casual conversation was more. Instead, it served a process of authentication and verification around knowledge already possessed by the Karen people. The questioning element showed a curiosity, which helps to gain 'payment' via wisdom from those visiting. That knowledge would be applied for example, on a map of the village they had produced showing how trees were to be planted and used. The concept of how to arrange the map and produce it has been learned from Western science and is akin to how The Father of English Geology, William Smith learnt how to draw the first British geological map by looking at a soil and vegetation map he found in the Somerset County Agricultural Society (Winchester and Vannithone, 2002). This was an active, not passive, seeking out of knowledge. The style of asking questions varies between individuals and cultures. Direct penetrating questions were not the style that I observed from the Karen people. The style was more oblique and conversational with phrases such as, *What do you think?* or tagged or with caveats such as, *If*…. However, such chat-based enquiry was applicable in other learning fora, where knowledge acquisition extended to:

going to scientific conferences; for example, attendance at the 'Returning Dignity' conference as an indigenous speaker as can be seen in Figure 4-40.

Figure 4-40: Karen leaders present a Voice from Indigenous People at Chiang Mai University. Source: 23rd Dignity Conference 04: 'Returning Dignity' - A Voice from Indigenous People, by Joni Odochaw https://www.youtube.com/watch?v=DCK-MxDD5Qo Copyright: 2014 Human Dignity and Humiliation Studies, Evelin Lindner [CC BY 3.0 (http://creativecommons.org/licenses/by/3.0].

marches and manifestations; ostensibly these were protests, but also they were about manifestation and meeting of minds with speeches, declarations and presentation of reports. While there with others who were Karen or from other indigenous communities there was a forum where knowledge could be shared or gathered. This included from informal conversations and discussions, much as a scientific congress may do this in the between official parts of the program.

voyages of learning; just as many people take a year out so too do some Karen people. In Western society commonly, a gap year is taken before or after university. For the Karen the time out could also be for university, but also before marriage or having children. Both the Karen men I talked with were single when they took this time away.

One Karen respondent had travelled to Japan and another to India. On these travels, they were able to interact, observe indigenous people in their daily lives, and bring back wisdom to their community. How much this is a holiday and how much it serves a learning purpose varies

according to the individual and the choices they make. However, these are distinct from working trips or holidays per se.

This approach to learning a range of life skills is found with the Farm Life project near Doi Mot, Thailand led by the Lahu man Jakatae Jayo.

Figure 4-41: Coffee planting. Source: Da We Yu Hills Lake Side Global Services Learning 2014 https://www.youtube.com/watch?v=ugC0pbPj0KY Copyright: 2014 Da We Yu Hills.

Figure 4-42: Basket making. Source and copyright: Ibid.

Figure 4-43: Blacksmithing. Source and copyright: Ibid.

There learning experiences are provided in: Coffee Planting as seen in Figure 4-41, Building and Roofing, Earth building, Trail Building, Cultural Exchange, *Jakuleur,* Basket Making as shown in Figure 4-42, Blacksmithing shown in Figure 4-43, Lahu bag making, Sports, Ceremonies in a global service context to students from the Lakeside School, Seattle (Da We Yu Hills, 2014). *Jakuleur* is not explained in the source, but looks like dancing in the Jakugu dancing ground (Da We Yu Hills, 2014), possibly in a life extending ceremony cf. (Matisoff, 1988a). Such teaching by indigenous people in Southeast Asia to curious westerners has precedent, with the Penan forest people's interaction with Bruno Manser giving an example of how deeply this can develop (Suter, 2005).

However, while these were present we also heard some skepticism reflected on more Western ways of being educated. There was an aversion to university that it offered "*many traps*"

(Jowalu 2014, pers. comm., #27). This did not mean that learning from there was spurned; just the format of that culture was not welcomed. Particularly, the costs and financial consequences of that study for an indigenous person from a non-monetary culture was a concern.

The first student (Peter) in the Lazy Man School was making a house using natural resources, caring for cattle and maybe other things should they arise in the context of daily life, so for example when I and a small group arrived he took part in explaining the school and activities he was engaged in. At the same time, he was to learn philosophy and food preparation. Learning would be experiential with elements of non-formal learning and context-based. If he had a particular interest, this would be developed around and the curriculum adapted. So in praxis it was closer to the folk high school approach in Denmark, where learning is not about qualifications (Balle-Petersen, 2004) rather there is an "*emphasis on general, mind broadening education*" (Carlsen and Borgå, 2013). So language skills would develop and social etiquette, and practical skills all together. They were not separated, as they are all important in life and socialization. Discussions could explore traditional characters from his culture, Karen traditional characters and the wisdom they embody would be contrasted. This juxtaposition would allow the different cultural relations with nature to be discussed and evaluated.

Gardner's Multiple Intelligences (Gardner, 2011) envisions that learning works in different styles for different people, and so this story telling, practical action and close to nature way of learning allowed these different styles to be implemented. It is similar to a practical class having written instructions. These are then explained via a discussion with the students, followed by lab work, and afterwards perhaps discussion of what has been learned. In this case, the practical elements might take part over several days with ongoing assessment and learning opportunities in between each session.

It is better to describe participants as co-learners. This is how I felt the Lazy Man School was too. I also think the absence of graduation certificates and formal curriculum, and even some of the content was similar. As the indigenous people had come across school curricula before, this flexibility around the direction of learning was perhaps a deliberate choice rather than an omission. In any case, it reveals a lack of outside influence or control. This approach to inquiry-based-learning is a constructivist approach, and deals with connective knowledge rather than just quantitative or qualitative knowledges (Downes, 2007). Connective knowledge is similar to relational knowledge (Halford et al., 2010), but relational knowledge might tell us: the cat is bigger than the mouse; whereas connective knowledge would tell us the bigger cat catches the smaller mouse.

The use of self-identifying and self-creating experts within the Lazy Man School seem to be mass amateurization. "*Mass Amateurization = refers to the process whereby the dichotomy between experts and amateurs is dissolving and creating a new category of professional amateurs, also called Pro-Ams*" (Bauwens, 2011). The school has earth building content in what they cover, and thus involvement of those with architectural learning. They are pro-ams as they are not working as architects, but are constructing places for use rather than just intellectual dilettantism. Perhaps architects look at structures and this extends to social structures too. There can be "*really broad understandings as to what architecture meant and what it included*" (Sollfrank, 2013, 2014) as exemplified by *aaaarg* (sic). "*AAAARG is a conversation platform - at different times it performs as a school, or a reading group, or a journal*" (SarahR, 2010) and was created by Sean Dockray and seems quite conflated with The Public School which is another project and nothing to do with public schooling nor public schools, but was based on being a library of texts rather than a platform of proposals and people.

Collective co-learning on 'our' own terms

Peter, the student that I met at the Lazy Man School, originated from the USA and was from Anglo culture there. He had come from a Mid-West rural area. His reason for being in Thailand and finding his way to the school could be related to the itinerant tradition of hobo migration in the United States, particularly of the 1930s. He was particularly interested in Buddhist and then indigenous authenticity and how it related to society and living in the land, with a rejection or at least a critical look at modern Western society being a money focused work for a living culture. While he was not a book in the sense of the Human Library, he was part of a sharing, co-learning culture and thus a more co-learning approach was found with interactions, for example he explained to us about the dining culture and how he had been motivated to come to the school. So here, the connective knowledge was embedded within the student by experiential learning and discussions around meal times. The student then takes away, within himself, the explicit culture practices, which are associated with cultural beliefs and now "*make sense*" as Peter said several times after explanations. This is socialization. The learning is thence carried within himself as embodied tacit knowledge not only embedded explicit knowledge (Frost, 2010).

The school itself has a good relationship with Chiang Mai University, and so interaction and learning could in theory go both ways. That university also runs the indigenous school, which is in the Karen community so is active in looking at alternative teaching methodologies from the dominant form in the Thai state education system. The Thai education system officially has a level of flexibility in methodology and is innovative. However, the teaching colleagues may not be so innovative and teachers commonly have loans that they want to pay off and often see the indigenous schools as a worse option than teaching in place where the Central Thai cultural is more dominant. So good teachers tend to leave after a few years for jobs elsewhere and are not so motivated to develop alternative educational approaches, which they may not find applicable in their new jobs.

The hope from the Lazy Man School was that the sad young children wearily traipsing off to school with heavy rucksacks on their backs; and teachers that care only for money due to the system could be replaced with something better. A school that cherished the culture and provided a rôle model in the form of teachers that were proud about their traditional culture and not ashamed about it. The Lazy Man School also wants that the learning is culturally based and relevant to the young people and their lives in traditional Karen societies, not that it has undergone Thaification.

The *Thinking Communities* pattern

While the university model school seeks to do elements of that vision for children, the Lazy Man School seeks to provide the same for adults, particularly adults who do not have that culture either through cultural loss or just because they are from another culture to start with. Cultural loss for Karen people is a real phenomenon and I met those who had been to see Karen people in the camps by the border with Burma (Myanmar). They highlighted that these people were Karen, but the younger ones were estranged from lives with nature, and did not know about natural resources management, even in the abstract, let alone the practicalities as their lives had been restricted to camp life. There is hope that some remedial education might be provided to those people.

Peter, the Lazyman scholar and others were welcomed without limitations on time, as long as they were following the program. The end point would be able to make your own house and

live independently so it was a kind of rehab from modern society. In fact, some of houses were being built out of earth while I was there.

There is a pattern that has been recorded by the *Public Sphere Project* which is a non-profit in the USA, (Schuler, 2008a) which seems similar to what I saw happening. The pattern is called the *Thinking Communities*. It is described thus:

"*Many people are inspired by the ways of living and thinking of indigenous peoples. However, it is often hard to establish relationships with such communities. A First Nation, however, hosts a simple hostel with a limited number of rooms on its domain, allowing thinkers to work on their projects, while inviting them for a selected set of meetings and activities with the local community. This offers visitors a low-intensity, non-intrusive opportunity to get a realistic sense of the values, problems, and strengths of these communities, much beyond the understanding provided by the usual, shallow touristic visit to a reservation arts center. Simultaneously, it offers these local communities an alternative source of income and access to a world of ideas and contacts provided by visitors sincerely interested in building bridges between cultures.*" (Schuler, 2008b:469).

While certainly there are similarities in this model, there are some crucial differences the Lazy Man School exhibited. Rather than a separate hostel, Lazymen scholars were integrated into the family in a form of homestay. The Lazy Man School was in early days so the idea of separate projects of your own had not fully developed, though I think over time it will do. The difference over privacy was not one that I noted particularly, but the concept of a safe space might arise in the future, both to protect the Karen and any scholar at the school. The relationship to money is also something that is being imposed by an outside value system that is money focused. This has been imposed on the First Nations, which gave rise to the description of the *thinking communities pattern* and now on the Karen.

The idea that those who come are 'thinkers' or 'scholars' are also constructs that the Karen may not have thought of when they developed the school, but become more commonly used and thought of as others self-describe as so. Rather in a culture of hospitality, there is a reciprocal arrangement. This can be seen in much of the learning around computers. It is akin to the concept of a befriend or befriender in youth work (BN, 2012). A befriend relationship develops via support given to achieve, in a comrade like arrangement, but usually there is no obligation for the supported to return support. The youth leader is not the friend of the youth they work with, but the befriend of that youth and often takes on a mentoring rôle (Colley, 2001). In the case of computing learning, there is not a direct obligation, but rather a peer network is created and there is a psychological or social obligation to show solidarity and thus support with others that are involved in the same knowledge community.

In the Lazy Man School there is a community created. Learning is reciprocal, between peers. Re the Lazy Man School a peer could be defined as having a shared value system or knowledge community. Those interested in: violent revolution are not peers; those into low-impact sustainable livelihoods are. There is a strong element of autodidactics with self-led learning. Motivation must come from within, and is not generated from an external locus. In the cases of interaction I saw, mentoring was present, as there was an element of the Karen elder, supporting his adult sons. Those sons supported other adults and children where there was no family relationship.

There was no uniform exactly, but there were traditional jackets that when worn are supposed to show that what you leave behind you is also what you bring forth. Your word is your truth

and your actions are a truth. In English, we could say you walk your talk. These were presented in such a way that they were both everyday wear and something that you would aspire to wear, much in the same way the modern chef's uniform contains symbolic meaning and is aspired to. In the case of the Lazy Man School those that saw the jackets would take on the aspects of enclothed cognition, and if not from Thailand would desire them as a souvenired "*occupational artefact*" (Robinson, 2013). The occupation is that of a successful Lazyman scholar.

4.3.3 From the spirits and religion

For indigenous people themselves their beliefs are often reduced by others to being merely "*traditional cultural expressions*" (Adjei and Stoianoff, 2013; Picart and Fox, 2013) and not regarded as religions equal in equivalence to say Christianity or Islam. This is an Abrahamist construct that also regards spirituality and religion as separate (Ammerman, 2013). Scientists will often say that they personally have no philosophy and no religion (Dawkins, 2010; Plantinga, 2011). Despite this claim to lack belief, their practices are commonly grounded mainly in logical positivism, and scientists follow professional ethical behavior with clear religious underpinnings rather than personal psychopathic tendencies or simple utilitarianism. Nevertheless, there is a culture of not valuing belief systems so strongly, which are alternatives to the more secular disciplinary approach. Consequently, beliefs in spirits and a spirit world are often ignored and downplayed.

When I did my research, I met no one who told me they were an atheist. The house I stayed at in Chiang Mai, owned by a mother of Central Thai ethnicity, had as many do a little spirit house outside it. While the owner was skeptical of the spirits, or in fact any religious belief, she went along with Buddhism and spiritualism for others rather than getting rid of the house or symbolism. I did meet people who told me they were Christian, and others who told me they believed in their traditional indigenous religion. This included university lecturers who must have completed higher education scientific degrees. I did not assess, if their beliefs equated with a weak deism or were instrumental in regard to traditional religions or a deep seated fundamentalism that there was more than the material world and material beings which they had direct contact with. Nevertheless, I could see that these relationships with their beliefs held lessons for learning, and how natural resources are treated.

A further challenge was discussing spirits and their presence. Just as we have a vocabulary for emotions, and other phenomena of the mind, we need a vocabulary for the spiritual world. Without that vocabulary it is, just as with pattern research and artistic research, difficult to communicate without appropriate paradigms it is made more difficult still without appropriate vocabulary. Therefore, what I learnt must necessarily be merely an impression of the reality I sampled. What I gathered and could reach through the veils of languages, beliefs and personal testimonies is given here.

Hmong

Kevcai, which means customs in Hmong, include some customs, which are practiced in the traditional way as a religion (Tapp, 1989). Some Hmong practitioners invited me to attend one *Ua Dab* (propiating the spirits) ceremony, in Ban Mae Sa Mai, where they engaged in these practices. In the main living space of a house, on the ground floor, I saw ram's horns (White Homg term: *kuam*) cast upon the floor and conversations addressed to the spirits. This ceremony happened to have an element of training others in its practice. Several men were watching and learning how to carry out the spiritual practices that were taking place. They had some time to practice and carry out some of the practices. There were three older men and one male shaman

that seemed to supervise this. Not all of the people there were allowed to talk with the spirits and perform all of the rites. The ceremony was quite long (several hours).Chickens were sacrificed, cooked and eaten. I was not forced to leave, but was encouraged to leave before a pig was slaughtered. All ages and genders were there, though for much of the time women and younger children were not in the main room where the ceremony was taking place. They were outside the door in a yard or in an adjacent room.

I separately met a woman shaman, or priest in Ban Mae Sa Mai and saw part of her house full of paper elements, which made up an altar. I was able to ask her some questions, though she was curious about my presence and welcomed that I was coming there to study. She was not treated in any visibly special way and her house was nothing special compared to the surrounding houses. It was located in the middle of the village and was typical as far as I could see. The exception was the altar space (White Hmong term: *taj neeb*) that was much bigger than other taj neeb. This taj neeb, in its location, seemed to form something like a chapel in relation to her main house. Whereas others had small altars on the wall (White Hmong term: *neeb*), or other religious items, namely shiny gold paper square with red diamond paper squares on it (White Hmong term: *tus xwm kab*) and burning joss sticks (White Hmong term: *cov teeb mos lom*) in their houses they did not have dedicated rooms for worship or religious practices. XXX

I talked with several practicants in kevcai as a religion and I was told that, "*Actually most of the people say the spiritual is not true the ancient thing, but if we believe it, it will be something that can make us too like, if we believe that there is some spiritual with the comparative religions we will keep it on and then we will not destroy it. Yep.*" (Kisälli 2014, Interview:). So these spiritual customs are still current beliefs with power for many and seen as having a practical use for the people. Veli Tietäjä told me much about spiritual belief in good English. See Box 1 Hmong traditional understanding.

Box 1 Hmong traditional understanding

I asked Veli Tietäjä about the spirits and natural resources. He is a believer, yet I detected some skepticism within him about how things are now and how they were. With a broader education and access to technology, he does not see the spirits in the same way villagers in remote mountains did in the past. Like Nouri Kisälli the actual belief in the spirts can be equated, as he did, to belief from other traditions. In this case Christianity.

As part of the cosmology of the Hmong, Tietäjä held that there would be an understanding about place. Within that place there would be certain spirits. You could say the spirit of the place rather than a spiritual entity of a place. Awareness of this spirituality would allow you to do a type of self-magic or reading of the landscape.

This meant that you would be able to map an area to carry out suitable techniques or refrain from damaging practices. While not everyone could be sensitive to this, a map made by the local people could guide others. The spirits would not so much travel with you than a spiritual and land sense would. However, he was clear that there were local spirits and ancestral spirits, he pointed out that these guide practices and interact with man and each other.

Certain places were more likely to have spiritual presence, and important spirits. Trees and sacred forest, water features and ponds were particularly prone to have a spiritual element.

This makes the going fishing (Box 2) and the death near a waterhole I encountered the aftermath of in Thailand particularly poignant.

I reproduce a short part of the transcript here about how the wisdom of the spirits is learnt in Hmong society. It emphasizes the importance of ritual in memory, prohibituons and practices that should be engaged in rather than avoided. In this transcript, MP is me speaking, // is an interruption, and [[]] contains my comments. The rest is Veli Tietäjä.

Yes, the specific place you have to be careful on some certain activities.

[[MP So do you know any of those? How would it be have you been to a place and though this is a good place to do this or a place this isn't a good place to do this? Have you had that experience?]]

Yes, for example at the or the local stream especially at the point where the place where water comes out.

[[MP Wells up yeah]]

Where it's generating the local stream you are not supposed to pee there or to

[[MP //Pollute it in anyway]]

//Yeah! Yeah! To do any kind of damage. It's a place like the earth there is kind of a place for the local stream it is not, it is believed that the dragon is there and dragon's power is a very powerful spirit so the lady, a woman in pregnancy should not

[[MP //shouldn't go there]]

// go there as a walk. So this kind of specific issues specific places.

[[MP So if you had that place where you grew up and you went there you've learnt that by feeling it or have people have told you this is what's here and this is what's there? So as a child you have those feelings. That's right? Yes?]]

Yes.

[[MP Now how do you know the what the feeling means, do you just learn it in the culture or does somebody tells you or how do you learn it?]]

Well we learn from our parents from the community village elders like this. And then the point is that some places are producing experiences and then it is explained by the ritual performance in the forest, this person miscarriage or get sick on this or that, because of this spirit it has he or she harmed or has intrude in that spirit

[[MP So the elders keep that memory//]]

Yes

[[MP and you ask about a place where there is a feeling and they explain well this is what happened there and this is the spirit you've encountered//]]

Yes

[[MP // and they've contextualized it. So that's how is that memory kept? Is it kept by singing or stories or just they just know?]]

I think more on the rituals maybe.

[[MP So the rituals kind of cement that in the minds of the people that take part in the rituals?]]

Yes

Box 1 Hmong traditional understanding

What was most exciting about this was the potential for everyone to learn, not just Hmong people. Veli Tietäjä told me that "*I think that maybe we can talk about or refer to the cosmology of the Hmong rather than call it a science of the Hmong or a science. So to about the natural resources it has to with the Hmong cosmology of the Hmong for natural resources we have to understand the belief system."* This means that anyone could adopt this Hmong perspective and learn to live with the landscape in a way that perhaps we have forgotten. This is not a myth cult, but that way of belief is an occult one, till the hidden is revealed for our use.

Having seen quite a detailed cosmology I wondered if this also translated to Hmong Christians. To some extent a respect to nature does transfer between Hmong sub-cultures. I was not able to analyze any of the songs that I know had been written by the Hmong Christians I met, to see if they retained pre-Christian traditional Hmong influences.

Emäntä Parantaja, a Hmong woman who is Christian practices her Christianity in this way "… *she asks God permission to heal and asks God to give his divine power that this herbal can heal the people that he distributes this power to the people*". I asked if she is doing God's work when she does this and she told me "*Yes*". Her view was "*God give her this stuff so she could make and she can remember.*" Her translator further told me, "*one time a sick man came and she didn't know how to heal, so she pray and after she pray this voice told her this kind of herb*" and that, "*sometimes she doesn't know, she doesn't really know what kind of herbs, so she pray to God and ask for telling her and then she knows*" (Emantä Parantaja).

This seems very similar to "*some places are producing experiences*" (Veli Tietäjä) and the idea that you would have a specific altar as a professional and a spirit might communicate with you on your specialism. It is certainly more specific than a general God´s will be done.

Lahu

The Lahu people I met were all followers of the *Lahu nyi religion.* I was lucky enough to be invited to attend a ceremony where a spirit house was constructed. This was done outside the curtilage of the Doi Mot village. The aim was to propitiate the spirits. This was a regular ceremony that took place according to the wheel of the year rather, than just when someone felt like it or for some particular activity like founding a new settlement. There was a clear division from the area considered part of the village, and this area outside it. Other than just knowing, this could be seen by the woven rush mats on sticks, called spirit-guards, that showed where the edge of the village lay.

This ceremony consisted of us cutting down lots of bamboo and everyone, men, women and children splitting that bamboo and building it into a spirit house. This house would be a place for the spirits to dwell. By creating this place outside, it also delimited the use of the outside area as a spirit area rather than a farming area. I could not discern where, the village of Doi Mot regarded an area as forest and so outside of cultivation, and an area as worthy of cultivation and within the village. However, I could see that the houses where not all together, but were in a bigger area that made a village when topography was taken into account so that houses were not actually in streams, but built on mountain sides. There were also considerable areas in the village that were fields, and some areas that seemed to be treed and slopes that had not been cleared.

Was there a learning element? The children learnt to collectively worship, and how to build a spirit house and where to site it. Additionally, they learnt about the boundaries of the world, and what is permissible in different places. In a way, there is an implication that peer pressure and acceptable, appropriate behavior toward trees and wild-places is learnt. A respect for the spirit world and thus the spirit home as the forest and the spirit realm is also learnt, but actual management of resources in practical terms was not obviously present here. This event also seemed to provide a social element where talking about matters of concern were raised, I did not get the impression that there was any hierarchy, rather the absence of boundaries meant that I could freely talk with women, men, children and anyone of any status.

Being in the location of the forest, I was able to ask about the practices of selecting trees for building. I was told that men would normally select trees and several might go to the forest, and from previous scouting or general observation from living in the area and having visited the forest would select the appropriate trees for a wanted purpose and harvest those trees. As tree cutting in this area was mainly illegal, I was not able to explore this in more detail as to how they knew a tree was suitable and if the spiritualism played any part in selection or where it might be done, in some kind of village gathering or smaller family groups.

Karen

I did not directly experience any Karen spirituality. At the 'Returning Dignity' conference, there was a presentation about the cosmology that the Karen hold (Lindner, 2014). Karen views toward religion vary between individuals, communities and in how much freedom they have to express their views. There are very few Muslim Karen, slightly more Christian Karen, and a lot more that are Buddhist and Animist together and some that are exclusively Buddhist or Karen Animist. What is frequent is that an individual Karen will combine their traditional beliefs and practices with elements of several of these religions. I have found the terminology related to traditional belief refers to it as *Karen animist* and *Karen-animist-and-Buddhism*. It appears that some of the syncretic forms are also connected with Karen nationalism, political positioning, including relationships to nature and traditional practices and their own writing forms. To outsiders this makes a variety of different beliefs that are subsumed under the label Karen-animist-and-Buddhism, but to the Karen there are clearer separations, so the *Leke Religious Movement* (Buadaeng, 2015) and *Telahkon* (Hayami, 2011) are two of the better known Karen-animist-and-Buddhism belief systems.

As a result talking about 'Karen animists' believing one thing or another as a religious belief does not make much sense in respect to this culture. In Burma there has been less tolerance for religious diversity than other places and belief can be loaded with identity politics. In Thailand, away from the refugee camps, there is much more tolerance and lassitude with belief systems that allow syncritism and eclectic approaches to religious observance. This means researching

is an impossible task unless you have sufficient time to live long-term to understand the elements of belief an individual, community or family may have. Even asking is unlikely to get a clear answer due to not seeing the world in such a separate way and the difficulty of loaded meanings a certain religious label may carry.

4.3.4 Forest walk (Hmong)

When I was in Khun Wang village, I asked to learn about the forest, how people learnt what was where and so forth. I was offered the chance to go on a forest walk by Emäntä Parantaja, where I could learn these things.

Forest walk for food and medicine

In this case, of Hmong culture the focus was both to gather food for eating, medical supplies and as a technique for educating the others and myself. As the walk I participated in was not for any organization, and not for any money it was done for learning only. I asked Emäntä Parantaja who led us about this kind of walk. She told me that commonly she would take small groups, of three or four people to the forest, but not larger groups. The reasoning for this seems to be the difficulty in seeing what we are interested in and maybe also to avoid over-harvesting and damage to the forest.

The route we followed was a route that it seems she has often walked. It was clearly in the forest and was clearly not a cleared trail that someone could specifically go on a regular walk around a part of the forest on an amenity trail. Where we went entailed some climbing; up steep banks, over streams and over fallen logs. It was not a managed plantation forest, but closer to a natural forest. Nevertheless, it could be seen that it was not completely wild and it had been used by others to remove trees and other wild forest products. Later on she told me that the nearby villagers commonly took dead wood out of that forest for firewood and other uses.

There were parts of the wood were I could see that she had planted, or someone had at least taken action for desired plants to grow. As we walked through the forest Emäntä Parantaja would show all three of us plants, in this case I took photographs to ask later about the plants, but normally people she went with did not take photographs. She herself took the plants that she needed, some plants were shown to me without removing them or harvesting any of them. This was done carefully, so only what was to be used was taken. There was no stopping to pray or ask if plants could be removed as far as I could see. We kept a fairly brisk pace, and any harvesting that we could assist with we did.

Each plant was explained to me what it did and its name. As I did not speak either Hmong or Thai, we did not do so much of that in the forest. I believe, typically explanations would be given in situ as context based experiential learning, based on my experiences of being with those that harvest plants for use in the UK, Austria, Germany and Finland. Instead, when later we were back at her house I was able to look more closely by looking on a computer screen and at what we took from the forest. I asked about the plants and recorded Emäntä Parantaja's answers. She was able to recognize all of the plants on the screen and say what they were used for. Perhaps she has "*super recognizer*" abilities (Gaidos, 2013) and this is applied to herb lore, which would fit with Gardener's concept of "*the intelligence of the naturalist … who is readily able to recognize flora and fauna, to make other consequential distinctions in the natural world, and to use this ability productively (in hunting, in farming, in biological science)*" (Gardner, 1995). Therefore, this recognition through the screen skill offers a potential way of learning and teaching about traditional plant use and where and how they should be found in a forest. It

allows forest restoration to be carried out, based on an already existing forest, in reference to the common plants that are most used and found in different microclimates, for example those that grow near streams and those that grow on drier banks or forest edge and shade-loving plants. We identified about a score of plants.

Essential medicines and basic foods list

Twenty plants sounds like the beginning of an essential useful plants list. This is comparable to the *WHO Model List of Essential Medicines*. The medicines on this World Health Organization (WHO) list "*are intended to be available within the context of health systems*" (Seuba, 2006). It could be argued that the Hmong cultural way of healing using these plants is a health system using traditional ethnobotanical knowledge. It could make sense to see if we are able to learn in the same way from plant-based healing as we do from modern pharmacology with a plant list suggesting what we want to see growing in the forest for use in herbology treatments. As the pharma industry is untrustworthy in a South East Asian context in terms of product authenticity, ethical behavior and mission (Gracie, 2014; MacDonald, 2016), a traditional medicine essential plant list makes sense not only culturally, but from the point of view of medical efficacy too.

A similar viewpoint could be considered for food resources that would form a well-balanced diet for forest dependent peoples. "*Food adulteration is an unethical and often criminal malpractice which is unfortunately commonplace in countries of the South-East Asia region*" (WHO, 2015). To avoid these food fraud effects self-production, with essential dietary food combinations can be carried out. Such a food production and consumption culture, which is authentic to the indigenous heritage, could be displayed with a pictorial food guide such as a food wheel or nutritional pyramid. "*In some food guides, the presence of indigenous foods and a particular dietary pattern resulting from different geographical conditions and cultural heritages have … been considered*" (Painter et al., 2002) such as the Filipino (Orbeta, 1998) and Puerto Rica (Macpherson-Sánchez, 1998) cases, and thus this approach could be adapted to the Northern Thai context. Developing a relationship between greater plant curation and consumption would increase the variety and types of plants eaten. This makes sense in the Asian context and was successfully implemented in Japan in response to a worsening diet due to Western influence (Shimbo, 2016). It is nutritionally sound advice to get a "*complex antioxidant-rich diet*" (Bøhn et al., 2010:15) based on "*Fruit and vegetables* [which] *contain …a myriad of nutrients and phytochemicals, including fibre, vitamin C, carotenoids, antioxidants, potassium, flavonoids and other unidentified compounds which are likely to act synergistically through several biological mechanisms to reduce risk of chronic diseases and premature mortality*" (Aune et al., 2016:20).

To some extent the idea, that food and medicine are both consumables, takes this into consideration. This joined-up approach was something that Emäntä Parantaja had, as we also gathered some plants only for eating, based on their nutritional aspects rather than solely their medicinal treatment prospects.

WHO have made a series of monographs on selected medicinal plants to "*provide scientific information on the safety, efficacy, and quality control/quality assurance of widely used medicinal plants; …provide models to assist WHO's Member States in developing their own monographs or formularies for these and other herbal medicines*" (WHO, 2002). They are "*a valuable scientific reference for drug regulatory authorities, physicians, traditional health practitioners, pharmacists, manufacturers, research scientists and …the general public*"

(WHO, 2002). Each state could thus produce an essential list of medicinal plants to be cultivated and educated about.

4.3.5 Self learning, the self and society as a learning space

Is it possible to describe a learner? How about an indigenous learner or even a good learner who is indigenous and suited for NRM? When I put it like that then this seems impossible, yet I did meet people in the course of my field research in Thailand who were successful learners and applied their learning in context. Could I contrast then them with unsuccessful learners in any meaningful way? In any way that is useful? What metrics should I apply to judge this? I would say I lack enough data to draw any such firm conclusions.

I split learning into two domains:

Individual Learning, which is making knowledge a part of you and may be embodied, embedded and active or passive in realization.

Collective Learning is knowledge or data, which is accessible to a system or community. Collectively it can be operationalized. It does not necessarily have to be usable by one individual. It is a commons.

Family tradition and thus family support seems to be a factor in learning. I would want to see that there is support for a trade or profession from the family. My respondents that were operating in growing plants, tourism related work at the botanical gardens or healing arts all had other family members with a tradition and practice that they could and did learn from. This does not mean they could not be successful at something completely unrelated, but it does mean they could be successful at learning something related. Speculation about the family habitus, genetic proclivity and other factors can be reduced here to the nature nurture debate, but autodidactics play a rôle so these may well be emergent properties, which rely on both facets of a learning environment, which can be augmented by outside intervention.

Society support, many of the learners were learning despite changes in their society. While they were embedded in a cultural milieu in their background, their learning was often at odds with changes in wider society and even at times, their own activities went away from it. I think of the Hmong person I stayed with, that had studied car mechanics, before he dropped away from that and went to agriculture in his village as many others were doing. Emäntä Parantaja, that had taken the path of chemical agriculture, before returning to her family tradition, and Veli Tietäjä who had studied social sciences and then talked about how one day he may become a shaman in his culture. All had in common that they had made a change from their traditional cultural trajectory, which they had subsequently altered from, in order to move closer to their own cultural roots and traditions again. Here there are two aspects: *societal closeness*, which was perhaps an external locus of control;

And recognition and *movement toward their own culture*, which I would say was an internal locus of control. At times this was a conscious decision, as when Emäntä Parantaja decided that she would like to follow the path of healing after an illness. Or when Nouri Kisälli decided that, he wanted to learn to read and write Hmong and researched its history more closely. In neither of these cases was there any pressure to do this, in fact wider mainstream society pressured in just the opposite way, to integrate and become materialistic and become Thaified. Another

example is Jakatae with his use of the Lahu building style, sharing via global service learning as a means to learn for himself at the Farm Life coffee-bar and guesthouse.

Memory and intelligence

Here I mean that there was a high enough level of intelligence. This is a given for learning and some include memory as a component of intelligence. When I look at the indigenous Karen that I met, their definition for failures to learn was related to aspects that were loss of memory related. They indicated that the Karen people they met in the camps did not have the know-how to function as Karen; they had no memory of it and had not been socialized as other Karen had been when growing up in different community settings. They also pointed out that those in their society that suffered from alcohol problems had forgotten their traditions around drinking culture. They were similarly dismissive of those that blindly went to school, that they were not going to be recalling their traditions and learning how to function in society by having been in a school, or a university. This was not a paranoid suspicion of the socialization of schools or from personal bitter experience of bad schooling, but taken from what they observed in others that did go to school. Therefore, this meant as well as their being a cultural memory, they personally enquired into the past and kept these rural skills as a living tradition. This is very much different from what people will say, when they claim the people do not remember the past, and that they only live in the here and now. Perhaps this is dismissive of oral culture or rural or indigenous culture. Such an ignorance of minority discourse and expression is not coming from those of the indigenous people who are good learners.

Curiosity was also something I wondered about. Personally, I have always had a strong thirst for learning and a great curiosity. I wondered if those I met also had that curiosity. I did not see a level of curiosity that matched my own in the indigenous people I met, but cultural factors meant it was not possible for me to assess the level of curiosity. I did find that the Karen people I met had travelled to learn and broaden their experiences; they had been interested in other techniques of land management and house building and schooling, which they were then applying. I saw also that the Hmong people I met had at least some level of curiosity, but there were never many Hmong nor Lahu people coming to ask me questions and learn from me when I was in their communities. In addition, when I showed that I might know some stuff that was interesting there was not a strong engagement with me to learn directly from me.

Language ability is something else that I think can be used to assess a good learner. In Thailand use of English is required to get into university (Draper, 2012) and is looked upon favorably. However, my personal experience is that if I want to learn good forestry I can read lots of English literature and learn a lot faster than if I try to improve my Finnish knowledge by reading Finnish papers and publications. Similarly, the indigenous people would learn more if they concentrate on learning from oral culture than trying to read around the subject in languages that they are less familiar with. I suspect that if I did conversation analyses (Wooffitt, 2005) and looked at the corpus of words that individuals had in their idiolects I would find a relationship between the successful learners and the words. I think I would find more meanings and more varied applications, which is indicative of a wider lexical field.

In conclusion, these are some of the impressions I learnt and ideas on how they could be explored further. It is important to look at the successful learners and the unsuccessful learners. Otherwise a confirmation bias is likely to creep in, sometimes called the *Swimmer's Body Illusion* (Dobelli, 2014). This is the mistaken view that the factors leading to success, can be found by only looking at the successful. In the same way, I think the factors I propose are

valuable for successful learning, but there may be other factors, which tip the balance toward successful learning for these particular learners.

4.3.6 Social media and devices

The definition of social media is currently in transition. As web 2.0 matures and content goes cross-platform from desktops and laptops to phablets, smart phones and augmented reality devices or e-readers the boundaries are eroded. Mainstream media, produced by professional journalists, starts to disappear as it is replaced with user-generated content. As a result, older usage may indicate that social media includes static websites, but newer usage would restrict social media to interactive fora. These may be; wikis; bulletin boards, like Usenet; discussion groups, such as; Reddit, 4chan, Facebook and Google, host; and feeds such as, Really Simple Syndication (RSS) and Twitter.

As more people have access, and service provision for e-government grows, then these become the media, which are used, perhaps in place of traditional media. There is a digital divide effect where most people who live in rich urban areas have access to content in this way. Those in less connected areas, the older and marginalized communities do not have access and do not use this content. When people in the connected areas think of the less connected, they are liable to engage in a number of logical fallacies.

They may assume that the other areas will take longer to catch up and when they do, they will be inferior in service levels and access speeds or depth of content. This is often not so.

In Thailand, I saw in the villages the people were not watching television, but were using Sony PlayStations and SMS to communicate. Mobile phones were being used to share content and arrange meetings. They were being used for virtual meetings and collective worship in the form of conference calls. Mobile phone use was ubiquitous and crossed-over generations. Whereas curated content such as photographs in photo albums was missing in many people's lives, they would send texts and call each other. In an oral culture, you do not write much and this use of technology has not replaced the place of letters and written communications. It is not a replacement step, but a direct jump.

For the older generations computers were expensive and difficult to access. The effects of Moore's Law (Lopes et al., 2016) meant that as a self-fulfilling prophecy, the large chip manufacturers tried to make improvement and this led to price-falls on their older chip models. This drove innovation and the chips into a wider range of products that reached the consumer end. This has affected motor cars, computers, mobile phones, cameras and other products so they are better and cheaper. As a result, there is increased productivity and reduced prices in real and relative terms. Improved logistics and rising living standards in Thailand have pushed greater wealth into the community, which has reached more people.

The result is a more technically literate population as a whole. Older generations have learnt to use this technology where it is in their lives and found to be useful. So we see learning technology is now no longer being "*all about technology … but the technology of learning (as opposed to the technology in learning)*" (Rushby and Surry, 2016). Family peer pressure, from younger generations and to some extent the same cohorts has encouraged the widespread adoption of mobile phones, which have low barriers to usage. In respect to learning, when I was in Thailand, the use was mainly for messaging, and voice communications. At the same time there are plans for all children to have tablet computers in school for free and a national strategy to make sure people are literate in the use of social media (Van De Bogart, 2015). So there is

extensive usage of all of these by the indigenous people that have left the villages and now live in urban areas. As I did not research in urban areas, how much they are used for natural resource management cannot be assessed.

By using devices, it would be possible in Thailand to do many of the NRM aspects we have in the rest of the world. It would be possible to develop localized apps and resources for a targeted indigenous community language. That has happened with online editions of the Bible that can be accessed in Lahu, White Hmong and Karen languages (Karen Pwo Western, Karen Pwo Northern and Karen S'gaw) produced by the Jehovah's Witnesses (WTBaTSoP, 2016a). Their Bible translations can be seen in two languages juxtaposed next to each other on a tablet screen, by using the free app *JW Library* (WTBaTSoP, 2016b).

There are "*868*" different languages downloadable from their website (WTBaTSoP, 2016a), and some language translation and learning materials are also present, such as software which reads the content. *JW Language* is an app that is "*to help language learners improve their vocabulary and communication skills*" (WTBaTSoP, 2014:1). These resources could be applied for NRM by some simple hacking. Some translations of geographical features or plant related terms might be attempted, and learning of phrases for communications too. Digital multilingual versions of books might be made for aspects of interest, such as fire management, with languages spoken in Thailand. *JW Language* already contains Thai and English as options for "*one of the 22 available languages as your native or target language*" (WTBaTSoP, 2014:"JW Language Features" para. 1) which other languages could connect with .

Hmong-English spoken translators are available as phone apps and machine translation has been built for Hmong as a *Severely Under Resourced Language (SURL)* (Lewis and Yang, 2012). Hmong language content available in the USA includes health, diet, recipe, fishing and organic farming content. Commonly produced in White Hmong, it is accessible and understandable to the Hmong in Thailand. Cross-media marketing means that video content is being promoted through apps using the Android OS and social media platforms like Facebook or Google Groups. Content is being produced in Thailand and Laos for American audiences and vice-versa.

I found a website called the *Hmong Kayak Fishing Club*, which seems to have come from a group of Hmong people who produces fishing and hobby boating reviews. The reviews and content are all in English, though and it is clearly an American site and was a Google Group, perhaps to have YouTube access (Yang, 2013), but appears to also be on Facebook (Yang, 2011). They say that, "*HKFC are a group of Hmong anglers passionate about growing the sport of kayak fishing across the USA. … HKFC is a club open to anyone interested in kayak fishing and is not exclusive to Hmong persons, kayakers or fishermen*" (HKFC, 2015). Clearly, they are starting to use Hmong and out-door lifestyle as a brand, albeit one embedded in a living *jäger culture* (German term: *Jäger und Sammler Volkskunde* meaning Hunter gatherer folk know-how), rather than as a fictive backdrop. Jäger culture is a culture, which is active outdoors and is engaged in a close interaction with animal wildlife. In principle hunting, but also included in jäger culture, could be studying wildlife without the intention to harm it.

There are Karen alphabet downloads for a mobile phone keyboard. Karen and Lahu content also exists, but I found more Hmong language content, and there were no discussions about creating Wikipedia wikis nor Google Translation services for either of these language communities. User generated content would provide useful content, but would need curation and some kind of archiving process to make it meaningful long-term. This is possible as other apps and projects have shown around the world. To be really

useful technology related aspects need to be considered such as technical support technology, formats and presentation. For more on intercultural learning see (Haas et al., 2016).

Veli Tietäjä claims, "[written] *publications are not really useful to [produce], because Hmong in many groups are not with a written culture. More* [an] *oral tradition of transferring knowledge or this*." He felt "*the CD or DVD or visual media would be*" a better thing for educating or reaching the Hmong people for education around forest restoration and the other work that FORRU-CMU does. He further told me that, "*There is a network of the what you call indigenous people and from time to time the chance to learn from each other a conference or a workshop or whatever. So through this chance the indigenous the young people who, they are able to help the local people, the elders also be active on doing this is possible to do this as a workshop to train the young generation of indigenous people in making films and making documentary films and to kind of take that issue too, to the normal public. To the government or ...*".

4.3.7 Action-based research: Indigenous Peoples Forest Wiki

Those given the chance to do action-based research are often from a 'suitably educated background' with its own subculture and socialization. The supposed change to a co-creating paradigm is that instead of doing research and then disappearing, it is done with people who can continue afterwards to make use and grow from that background. This approach has been labelled first *action-based research* and now *collaborative* or *co-creative action-based research* (Lagae, 2012). Sometimes it is given other names and not framed as being part of science, but arts or social and community work. Part of a societal general trend toward co-creation, it still requires one or a small team of capable people to steer the process and make use of what is there for those that are being co-worked with.

There is often a gap between knowledge and implementation or application of that knowledge. This gap is lamented in Europe for its rôle in stifling innovation. Bridging the distance between researchers and implementers is what I hoped to support in Thailand. I wanted to use my research abilities and knowledge of community based internet technology to develop with the indigenous people. Social innovation was very much in my mind, rather than the cash economy kind of innovation I have heard that some people take an interest in. I thought to make connections and bridge this knowledge and usage gap with a wiki platform. I have been using wikis for this purpose for over a decade. To me the Appropedia platform (Sunter and Watkins, 2013) seemed the most useful way to do this.

Appropedia describes itself as, "*the site for collaborative solutions in sustainability, poverty reduction and international development through the use of sound principles and appropriate technology and the sharing of wisdom and project information. … Appropedia has been described as an "appropriate technology wiki," but it is much broader than that - it is a green living wiki and a wiki for all matters of international development and aid. Appropedia is an open site for stakeholders to come together to find, create and improve scalable and adaptable solutions. This can include sharing information and collaborating with others on how we can lighten our ecological footprint and live in harmony with nature and our environment in developed countries, or discuss eg low cost technologies for use in the developing world*" (Watkins, 2016:1). Its mission statement is summarized as, "*Sharing knowledge to build rich, sustainable lives*" (Watkins, 2012:1).

Appropedia uses the same wiki software as Wikipedia, and so is familiar to enough people without a steep learning curve at the community level, which is needed to support newusers to reach a critical mass, is easy to learn, flexible and reliable. The biggest downside is that users, or contributors, think that a wiki has to be run like Wikipedia, if they have prior experience of wikis particularly troublesome is the "*No original research*" policy (Wikipedia contributors, 2016c:1). Wikipedia has this policy, Appropedia does not, and I want to have lots of original research on the Indigenous Peoples Forest Wiki. I chose the Appropedia wiki as it seemed to be heavily supported by Engineers Without Borders (Helgesson, 2006), who were people I already knew. I believed, having done another project on that wiki connected with Thailand, I could use this space and put multiple languages on it.

While this was true, the benefits to the indigenous people were not readily apparent and without my presence, there was little to no motivation to take part in the wiki content development, [illegible] ways of operating in their lives. These are just some of the barriers I faced in trying to do citizen science. Other problems and promise around citizen science largely revolve around the level of professionalization and framing, rather than just time or money resources. Questions are raised about what are citizen scientists and what is their rôle in any scientific activity. Are citizen scientists; citizens doing voluntary basic technician level work, or are they citizens doing science? Who leads a project the citizens or the scientists? (Brossard et al., 2005; Cronkleton and Hilbert, 2011; Bonney et al., 2014). This comes partly from the [illegible] and the rise of prosumers.

Figure 4-44: Indigenous Peoples Forest Wiki splash page on Appropedia Source: Own work on Appropedia, http://www.appropedia.org/Indigenous_Peoples_Forest_Wiki Copylove: the world

Well I did create a wiki, the splash page of which can be seen in Figure 4-44, which I thought would be a way that citizens and academics could both contribute to. I did put some content on it. I did speak to and get verbal interest from Lahu, Hmong and Karen people, but no content came from them for the wiki yet.

4.4 Learning techniques

4.4.1 Print media

Censorship régime

There is a wide range of print media available in Thailand. I saw no signs of state censorship as regards non-Thai media and even in the Thai language, there is a freedom of the press. The approach to print media leads to self-censorship to some degree in Thailand. In respect to NRM, this may mean avoiding criticism of the Thai Royal Forestry Department (RFD), which could be misconstrued as attacking the monarchy (BBC News, 2016) or attacking corporate interests in a way that could damage their value via contempt arising from what is published (Leeds and Leeds, 2011). Changes in the RFD's remit shows that criticisms have

been understood and attempts made to deal with them (Usher, 2009b).

In regard to NRM, indigenous rights aspects or learning theory a plurality of opinion is encouraged and supported by the Thai press, universities and the book-publishing world.

A question of alphabets and literacy

I did see many street signs, but they were written in Thai or often in English if they were information boards in museums or along trails. Even if literate, the indigenous people may not have written ability in their own language in a commonly used script for that language. This makes community based education challenging. Provision of literature in those languages also requires education to read them. This does happen through the churches, but that literature tends to be restricted to religious texts and commonly then only the Bible and a hymnbook.

Another challenge for print media production and access for indigenous people is the choice of alphabet. The languages of the peoples researched in this thesis can be written with Latin, Pali, Mon or Chinese characters. My experience was that Hmong people used a Latin script for writing Hmong within Thailand. It seems that the White Hmong dialect is the standard for Hmong writing in Thailand no matter the subgroup using it, although there are several lects of the language and historically around 20 different forms of writing have been used (Duffy, 2007). This includes a flower script, where it is argued, though not universally accepted, that the flowers found as motifs on clothes are a representation of the language for those that can read it (Vang, 2016).

Pictorial language, which looks more like a cartoon is possible, and has existed in other parts of South East Asia (Graham, 1971) and furthermore floriography has a long tradition with batik and kimonos having deeper philosophical and other meanings on clothing (Saddhono et al., 2014). The most powerful evidence comes from the related lects of Small Flowery Miao and Large Flowery Miao (both Hmongic) where possible origins are from a cuniform writing, to embroidery and then an interpretation of clothing imagery to the Pollard script (Enwall, 1995). However, when I asked Emäntä Parantaja about the clothes, she made and if there was a meaning behind them, she told they are just Hmong style and indicate the person is Hmong. So if there is a flower symbolism or language it may not be so widely known.

There are various Hmong publications from the USA, and Hmong print media has been produced for the American Hmong community. Some children's storybooks telling traditional tales, which relate to village-based life; poetry, and some other books also exist. As White Hmong lect has been used enough to exist as a language offered by the Google Translate free online translation service, in theory any text can be translated to Hmong to some degree. However, there is no Hmong Wikipedia (Meta contributors, 2010), showing that there is limited desire for a print version of the language. As with most languages, there are different dialects and the White Hmong dialect, which is the most common dialect encountered in the USA, is the one that seems to have been most used for recent secular print material.

Lahu I never saw written, though it is commonly written with a Latin script in Thailand. There is teaching in Lahu, so some production and use of Lahu literature exists in Thailand. The Lahu Women's Organisation produces the Lahu Women Journal, written partially in Lahu. They also explicitly aim to "*reduce illiteracy among Lahu women*" and support Lahu learning in the community (LWO, 2008).

The Karen I met wrote some words in Latin script for me and told me that Catholics tend to use the roman script for writing Lahu (Jowalu 2016, pers. comm., #28), but the Karen languages are commonly written with a Mon script. Research has identified there may be up to 14 different writing systems used for Karen over the last two centuries, some of which are still used by some groups. There are Karen publications in Thailand; The Kwe Ka Lu newspaper is one of these. This newspaper is also distributed in Burma. It is printed in versions in English in the Roman alphabet, and Karen written in the Mon script (Eh Na, 2012).

I have seen no plant guidebooks nor forestry manuals nor similar written in any of the three languages that I encountered. I saw a book written in English for identifying trees in the Nursery and Education Centre in the Upper Mae Sa valley. This was the only book I saw in that place and though it looked well used, it was not well cared for and not on a shelf. There are certainly plant names that are recorded and translations of some quite difficult concepts are attempted for use in school environments with the indigenous terms. To make such guides and material there has to be a community of users who wants the guides in these languages.

There are people if asked if they want a book about birds or flowers in these languages, would say yes, but if they would say yes compared to a mobile phone application that would let them switch between languages there would be far fewer. From the indigenous people I met the Hmong and Karen would definitely find books about forestry in their languages of direct practical usage.

In the UK, the Forestry Commission's guides, especially the Forest Mensuration a handbook for practitioners (Matthews and Mackie, 2006)is widely used, "*Everyone refers to* [it] *as the 'blue book'* [and is] *very good …useful* [and] *talks you through, carrying out all manner of inventories"* (Tomkins 2016, pers. comm., #23). In addition to this there are several other guides the forestry commission produces, which practitioners might, as they do with the Blue Book, take with them into the forest when engaging in direct management, some as epubs for tablet and mobile device usage with around 800 possible downloadable pdfs (Forestry Commission, 2012). As of yet mobile phone apps, have not replaced these in the UK. Therefore, the potential exists for Thailand, but even in highly literate societies, the potential is not always realized.

Indigenous users

So what printed matter influences the indigenous people? No-one admitted regularly reading newspapers, I saw few books and when I asked people what they had read recently they were not able to name any authors nor books that they recalled. Emäntä Parantaja admitted that she could read Thai and Hmong. However, when I asked her about books I was told that she had given them all away and the only thing she read now was the word of God in the Bible or the hymnbooks she had. She kept no journal, and only wrote down things, which were connected with those religious aspects. She did in the past take books from a library, but now no longer took books, as the religious texts were all she was interested in.

I did find that one respondent, Nouri Kisälli, was reading a comic book (in Thai) called *just for laughs*, and within it there was a cartoon questioning logging, but the majority of the comic was not focused on nature nor natural themes. I asked him about his language ability and he could read and write English, Thai and Hmong. He had learnt "*Because// even though I am a Hmong and can speak Hmong very well I don't know the history of Hmong or I don't the ... know some words in Hmong so I have to learn more. Yes".*

He further told me "*sometimes actually I like to read for a book that about the nature.*" And furthermore, "*Actually not really a book of nature will be like sometimes a book of something, it will be of some part of nature and so I read that article of nature. Yes*" He told me, "*Hmnn. Most of the time I like to read books and also the magazines.*" When I asked him where he got them from he said "*Just from maybe I can get it from the museum or something I like I work in Botanical Gardens there is some books and so I take from there.*"

I also asked if he borrowed from friends and he said, "*I not borrow the book from friends because if I like it I read when I stay with them*". In his case staying with friends most probably was when he was in Chiang Mai rather than his village of Ban Mae Sa Mai. He had gone to more advanced school and university outside his village and had boarded there.

Nouri Kisälli added, "*I think young people like to read a magazine*". I did not see any of the people of the villages reading nor even looking at magazines.

I saw a fiction book in the Hmong house I was staying in (in Thai), but there was only one book, and I never saw anyone reading it. When I enquired, I was told it was the householder's sister's and she was away at university. When I asked my respondent that worked at the botanical gardens if book reading was common, he replied he did not know, which suggests it was not common enough for it to be a regular topic of conversation.

The Central Thai people I met seemed to read more, there were many books with Puckmai when I stayed at her house as she had a library in it, in both Thai and English. In Khun Wang there were in the past books and magazines that had been collected by Emäntä Parantaja when she had been studying plants when younger. As of now, she informed me; she no longer had any and had not used any for some years.

As the indigenous people who I encountered did not principally use the printed word, it would be hard to find associated techniques. The very limited usages I found were:

Emäntä Parantaja at one time saved books and papers for learning. As she had given them away, she no longer used them. Her giving away in this respect was for knowledge dissemination. She did not throw them away nor burn them, but passed them onto those that would find them useful or she felt would benefit from them.

Nouri Kisälli said he read books at friends' homes. If this was repeated across the culture, it would mean someone's personal library was a collective library, with books shared and stored collectively. This conversion from a private good to a club good would increase the utility and thus learning capital on aggregate within the community. However, I have no awareness that this was happening rather than serendipity of finding a book or magazine of interest while visiting an acquaintance. He indicated most people used magazines, and thus book or newspaper reading was not common in that Hmong community.

A few printed papers and the afore mentiond tree identification book were in the Nursery and Education Centre, which were used for work purposes, and instructions for the nursery staff. I have no evidence these were used by any indigenous people; and maybe they were only used by the FORRU-CMU university staff.

Some printed maps were used by the Karen in Ban Nong Tao to show the forest areas and talk about how they are planting in that village. The maps were produced for Ban Nong Tao as part of a project and had writing in Thai on them. I asked where the maps came from, and they said that they had made them. These were used to tell us about the village situation and to talk about their culture. When I asked a bit more closely, it seems that there is a forest plan that has been developed in concert with the authorities and the authorities had produced these in a co-creation process. The presentation revealed that they were using the maps, in a way to advocate for their own way and positioning of planting or forest restoration régimes, which were different from those that had been originally advocated by the RFD.

Karen people used an old British *tree harvesting permit* document, which was fetched for me to illustrate how hardwood logging took place on Karen land when mentioning the Britisher influence. It had clearly been used within that community for lore around how the people had suffered from a lack of environmental justice, and thus to educate about the concept and management of natural resources the Karen way.

This was connected to their current project to write down traditional stories, which included the Lazy Man stories. So although the culture was not one that seemed to have a painting, drawing arts aspect to it (I saw neither of these on houses nor in the houses I visited) it was being adopted as a learning and teaching method.

Karen people had framed pictures on their walls to share experiences. They were not in a photo album and had to be individually explained. They did not serve any religious purpose and the theme was gatherings of indigenous people at manifestations or award ceremonies of the ones I saw. They were used as narrative devices to tell about activism, and learning related to it.

In the Thai houses, I saw in Chiang Mai, I did see photographs on the walls of people, and these were used to mark political events and discuss them. I saw no photos in the Hmong houses nor in the Lahu. As I went in very few places, it could be they were kept elsewhere rather than they were not a part of the culture. All cultures had modern identity documents that include photos. However, the Karen houses I went to were connected with people in the family that were building some earth constructions, and these were being finished with some plant motifs carved into the surfaces, so there was an artistic interest there.

Jowalu, a Karen man tells me he only reads books in Thai and English (Jowalu 2016, pers. comm., #28). He does read some Karen, but only old poetry. When I asked him about where he learnt poetry from he wrote "*from grand ma and other elders*" (Ibid.) and when a child from his mother. So that would be an oral culture, but in his case supplemented with written sources. He sent me one of these poems, and told me "*This one is only karen pespective … How we see the univers, earth nature human and animal*" (sic)(Ibid.).

I saw a calendar on the wall of the Hmong house I stayed at in Ban Mae Sa Mai, it had been produced by the brother of the house occupier, who worked as a photographer and was no longer resident there. It showed some aspects of that society, but other than it being there as an objet d'art I did not see it used in any way. Even though there was an artistic connection to that house, I saw no more visual art there. I saw no pictures in the Hmong community buildings I went into.

As I know that the individuals I met were literate, it is disappointing I was not able to see usage of any printed matter nor how or where they used it. Those that do read books in Thailand have reported high time usage spent on reading (NOP World, 2005).

Although the NOP World Culture Score "MediaHabits" Index of 2005, where mean hours reading was reported to be 9.4 hours a week is certainly questionable (NOP World, 2005)[9]. When the Thailand score is juxtaposed against that of Argentina with 5.9 reading hours a week per reader; and supposedly the highest number of bookshops in the world per head of population (Goñi, 2015), the low number of bookshops I saw in Thailand makes me doubt that accurate figures have been recorded.

My interpretation of NOP's Media Habits Index is that there are those in Thailand that read a lot, watch TV a lot and listen to the radio a lot. The indigenous people without electricity, poor literacy and low availability of material in their own languages form a different sub-culture, from those high volume consumers, which is not so based on mainstream media. I do not know if those in this 'non-media sub-culture' used any printed media concerning NRM.

4.4.2 Practical workshops

Workshops are a technique familiar to us in the West. A group gathers for a particular directed learning experience, led by an expert or experts, to gain experience by a mixture of presentation, question and answer and to some extent practice of the learned experience where possible. Learning may be for the participants, but also for the organizing experts as co-learners. This can be in a client to service provider relationship. Hierarchies can vary: with service providers, who run the workshop, being of equal status in expertise to the clients or participants in the workshop. Such was planned for at the Automated Restoration workshop run by FORRU-CMU (the service provider) for regionally interested "*ecologists with technologists*" (Rattapol and FORRU-CMU, 2015) (the clients); or service providers carrying out some kind of knowledge extension service, as experts educating a target population. Such workshops were seen at the Daveyo Bamboo School, with indigenous people (the clients) becoming informed about organic farming accreditation.

The Daveyo Bamboo School was built to make knowledge extension possible, with agricultural extension service workshops conceived to be amongst the techniques to be applied. Teaching materials present, which could be used for these workshops, included a chalk blackboard and some small stools, which can be seen in Figure 4-10. Other themed workshops took place with the indigenous people at various meetings too, sometimes intergenerationally, for example on filmmaking.

FORRU-CMU ran workshops to help people learn to engage in reforestation. The model of these workshops is closer to the agricultural extension service, with a hierarchical aspect when run with indigenous people. However, there is a paradigm shift from a developmental approach where "*traditional action research (a first order tradition)*" (Russell and Ison, 2007:2), takes place as the experts inform less educated villagers about new techniques and best practice to one closer to co-learning (Russell and Ison, 2007). Here the aim is to explore together and learn from those already engaged and active, but supplement this with new tools and framing. This does not necessarily generate more knowledge in terms of data, but does allow a new systemization and thus new knowledge in terms of conceptual understanding.

[9] NOP World is an umbrella name for 47 companies, which in turn is owned by GfK SE and is a market research company. NOP originally stood for *National Opinion Polls* and Gfk for *Gesellschaft für Konsumforschung* (Society for Consumer Research) GfK Group, 2005. Annual Report 2005, Nuremburg, Germany, p. 160.

Such an approach, is very much pedagogically, based on *Bloom's revised taxonomy of educational objectives* (Anderson et al., 2001) whereby it is assumed that the villagers already have knowledge about a topic. Knowledge in Boom's revised taxonomy is organized thus:

Factual Knowledge ⇒ Conceptual Knowledge ⇒ Procedural Knowledge ⇒ Metacognitive Knowledge.

However, to do more with that knowledge rather than just repeat factoids needs cognitive processes to be applied at higher levels. In Bloom's revised taxonomy the cognitive process levels are:

Remember ⇒ Understand ⇒ Apply ⇒ Analyze ⇒ Evaluate ⇒ Create.

These two dimensions; the *cognitive process dimension*, and the *knowledge dimension*, both contain an element of hierarchy. This could be better thought of as, increasing complexity going up the hierarchy, rather than a value judgement of *Create* being better than *Evaluate* etcetera (Krathwohl, 2002).

A critique of this pedagogy is, that this view of education is based on American formal educational standards, and that expanding one part, such as the *Create* cognitive process around environmental services may be less useful than expanding the *Remember* cognitive process re *Factual knowledge* about economic plants for a target group like organic farmers or foragers. If self-sustaining communities already understand the concept of marketing their products and how local peasant economics function, then awareness of more plants than they have been accustomed to cultivating and harvesting may be more useful than conceptual innovation at the institutional level. Therefore, this is a question of where emphasis is placed in a workshop, rather than complexity and higher order thinking being the necessarily desirable educational objectives.

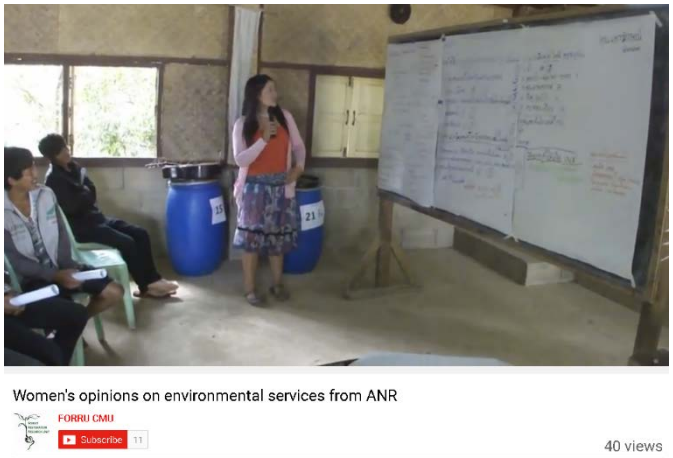

Figure 4-45: Women present at the Assisted Natural Regeneration (ANR) training on Doi Mae Salong. Source: Women's opinions on environmental services from ANR https://www.youtube.com/watch?v=fOdxVNmbCmc&feature=youtu.be Copyright: 2012 FORRU CMU.

The villager workshops FORRU-CMU have run, are sometimes split into a women's group as shown in Figure 4-45 and a men's group as shown in Figure 4-46, and then a plenary with flipchart to present information, such as with "*economic plants*" and "*environmental services*" (FORRU-CMU, 2012c, b, a).

For Thai society this makes sense as they have gendered localities, the Hmong even more so. However this does not accord with the Lahu who would rather see a split on material and moral grounds than gendered ones (Casidy, 2010).

Figure 4-46: The men present. Source and copyright: Ibid.

I was not able to attend any of these workshops as none ran when I was in Thailand as far as I was aware. I did take part in some of the 'Returning Dignity' conference workshops, run at CMU that were open to indigenous people, but there were no local indigenous people present.

FORRU-CMU also runs what have been called "*a training*" (Harrison, 2013). Theses are commonly done in partnership with an NGO like the World Wildlife Fund or the Food and Agriculture Organisation. One such training can be seen in Figure 4-47 where the education officer Golf trained a group from the community as part of FORRU-CMU's outreach work.

Figure 4-47: FORRU-CMU education officer Golf teaches cloche making. Source: Thailand Project Restoration https://www.youtube.com/watch?v=YDg2scVUE8M&t=32s Copyright: 2013 Thailand International Destination Film Festival, The Thailand Film Office under Thailand Department of Tourism, Harrison, Lydia; Cooper, Callum J.

Also present at that training was Sutthathorn Chairuangsri the FORRU-CMU Education Director who is principally responsible for co-ordination of the unit's education, training and outreach activities (Elliott and Chairuangsri, 2016b). Chairuangsri said, "*I am here today with the villagers* […] *they came here to have a training about nursery technique, also they have their own technique for seedling production, but also they learn many new things, like today we go out for seedling collection, what we call wildling collection*", when at one of these kind of workshops run in Ban Mae Sa Mai (Harrison, 2013:3). That collecting can be seen in Figure 4-48.

Figure 4-48: Collection of wild tree seedlings with bamboo tool. Source and copyright: Ibid.

This was a very hands-on, practical workshop where *procedural knowledge*, which is "*How to do something*", was explored. Specifically, in Bloom's Revised Taxonomy this would be gaining knowledge of subject-specific techniques and methods (Krathwohl, 2002). And on the cognitive process dimension it would reach the *apply* level of complexity, which is "*Carrying out or using a procedure in a given situation*" (Krathwohl, 2002).

A particular feature in Thailand is the concept of teaching the teacher. So workshop participants may be selected specifically, because they will have a multiplier effect, and then in turn teach others. Those that just want to learn a skill may be turned away or have to pay higher rates. This happened with the choice of participants for some of the earth building workshops. Non-Thais or even richer Thais may be asked to pay more money to subsidize the courses. Participants may be selected, and self-select on the basis of skill gaps, which might be on the knowledge axis or could be deficiencies in the lower levels of the cognitive processes hierarchy. Where there is already a level of functional traditional ecological knowledge (TEK), such as with Karen people on forestry management; Hmong herbologists on resource sourcing from the forest; or the Lahu builders on architecture, the gaps can usefully be filled in by such targeted workshops.

While I did not attend any workshops, I did spend some time observing the FORRU-CMU and the locations and interactions with the local community in Ban Mae Sa Mai. The workshops arose after FORRU-CMU became connected with already existing structures. Here the gaps are not always clear to outsiders and thus the workshops have a danger of not developing the higher levels of complexity or failing to work within the existing "*ecology of systems*" (Russell and Ison, 2007:2). In such cases, although action-based research is still desirable it can be better seen in the form of "*systemic action research*", which I would call collaborative action research. "*Perception and action are based on one's experiences of the world. Especially on the experience of patterns that connect entities and the meaning generated by viewing events in their context*" (Russell and Ison, 2007:2), summarizes how this "*second –order tradition*" of action research should be. This tends to be successful when experiential learning is valued from the indigenous people and any service provider. FORRU-CMU, by planting and harvesting and foraging with the locals they work with, would be better placed to deliver such context-based learning via workshops, than if they only rely on research carried out by the scientific community. That co-learning experience is being developed by a long-term involvement of FORRU-CMU in Ban Mae Sa Mai.

Nouri Kisälli told me he did not remember personally the time before the FORRU-CMU had been set up in Ban Mae Sa Mai, as he was "*very young*". However, when I asked him about the forest he told me "*Actually my father always told me that we have to replant it. Even though we cut it one trees one big trees we have to replant about ten small trees so it can be grow up in*

the future." and that the idea of reforesting came "*Maybe from... Also from Mr. Steve. He is also a part of this one part of the reforesting because we have to collect the seeds to the nursery and we grow the plants and then we can grow in the forest.*" He then told me "*Before we also do that*", meaning the Hmong people and confirmed this was so when I asked for clarification.

This is so as there was a *Natural Resource and Environment Conservation Club of Ban Mae Sa Mai* established by some of the villagers in the early 1990s. "*This group encouraged other village members to use the forest resources sustainably. A set of penalties was established for hunting and tree felling, and there was increased protection of the forest around the village and higher up the catchment, to ensure a clean and abundant water supply. Next to the village, a sacred forest was established, known as "Dong Seng" forest, where rituals are carried out for village and forest protection*" (Elliott and Chairuangsri, 2016a). So learning had come from the Hmong culture in regards to a forest protecting ethos and practical experience which had then been supplemented by outsider more specialized actors with procedural knowledge.

Elliott told me he first came to set-up the FORRU-CMU project in Ban Mae Sa Mai, in 1997 at the behest of officers from the Doi Suthep-Pui National Park. When he had initial meetings with some of the village men who held positions of local power, they were very positive to the idea of a FORRU and wanted to see forest restoration. This was in contrast to what he had been led to expect, which was that there could be opposition to the prospect of outside people coming to the village to alter the land management practice then in existence. Then, unbeknownst to Elliott, there had been a dispute, which ended in a "*murder*", over a land usage issue. Although there could be different viewpoints between families, in the *Hmong community, the village leaders could set the tone for a new learning mechanism (a FORRU) to be introduced and individual families could realize their dreams for land management. The first year's reforestation was destroyed by human caused fires, so the FORRU-CMU did not completely change practices when it started, a process of engagement was needed.*

Engagement happened through regular work-days that took an action-based workshop approach. These were supported by two indigenous employees of the FORRU-CMU who worked at the Nursery and Education Centre helping to grow suitable trees. Many of the trees had been selected by FORRU's experimental work at the CMU Forestry Department. The overall forest restoration technique used is called the Framework Species Method (Elliott et al., 2003). In the future this is likely to change as the areas to be reforested are reforested successfully, more drone-based reforestation is being implemented by the FORRU-CMU and extended across Thailand (Rattapol and FORRU-CMU, 2015) and the initial reforestation will require more augmentation for species monitoring.

The FORRU-CMU website describes it thus, "*Using the Framework Species Method, the villagers and FORRU have planted more than 65,000 trees on 134 rai along the ridges above the village (1998-2006). Tree planting is carried out once a year at the beginning of the wet season, and FORRU supports the villagers to monitor and take care of the planted seedlings. The villagers also make fire breaks and organise forest fire patrols. Fire prevention, which takes place during January and May of every year, is very important, otherwise the hard work of forest replanting could be lost. In addition, a youth group for conservation of birds was also established recently*" (Elliott and Chairuangsri, 2016a).

The regular work days are called "*a tree planting day*" and the community nursery has been improved upon as "*WWF-Thailand also sponsored Mae Sa Mai village to build up new "Nursery and Education Centre" and just had opening ceremony on 11th April 07*" (Elliott and Chairuangsri, 2016a). These days include all the villagers of both genders, including

schoolchildren and start to become more of a fun day. The vision is close to Wildlife Trust "*work parties on reserves*" volunteer days (Pitt, 2012; LWT, 2016).

The FORRU model is likely to be one that is copied all across South East Asia for forest restoration. This is the hope of Stephen Elliott, who has worked on REDD+ Readiness for Thailand and taken part in the regional forest restoration activities of ASEAN. As a senior forestry academic, he has seen many of the ideas he has championed become successfully adopted in Thailand.

4.4.3 Learning on the job

Learning on the job was what I hoped to see, when people would be learning collectively. I experienced little paid-work, with indigenous people working for, other indigenous people. Instead, I saw indigenous people who were in more of a sole-trader situation. I could not really see much in the way of learning that could be taken as a model for other people. An exception would be Nuori Kisälli. He applied himself to learn outside of what was required by the position. He would read and enquire from others telling me "*everyplace that I go I have to learn and then like if we go to that place and we have to follow them*."

He also had something of a teaching rôle, when he had a group to guide and instruct. The group of school children, who I observed him instructing, to my mind followed a typical museum pattern. By this, I mean the group gathered outside of the main vestibule of the museum supervised by their schoolteachers. Then they came in at his summoning, and he gave a short presentation as an animateur, the group then proceeded at their own pace around the museum and engaged in the museum activities. There was an exploratory aspect to that, so that acted like a discovery center, a more modern way of approaching museum and institutional learning. Information boards and artifacts from the various cultures were on hand, some of which could be handled by museum visitors. However, there was a definite route and trail that Nuori Kisälli directed them on and he would then explain and contextualize each room.

At other times, but not on this school visit, Nouri Kisälli acted as a living historian by demonstrating use of clothing and tools used in traditional Hmong life. This included him posting a picture of himself wearing a traditional Hmong item of clothing and indicating to others on Facebook, which is a social media platform, that it was Hmong. Initially he did this by just posting it, and not saying that it was Hmong. This technique, of creating an air of mystery, is one that is used by headline writers to attract attention to newspaper articles. He then explained after questions were posed to him the context and that it was Hmong. This approach to discovery learning; may have been learnt by him, was his own volition or was part of the approach the museum trained him in. The QSBG had researchers and a library to prepare outreach and education, so it was not just him on his own doing this. Some of these things, although from his culture, may well not have been known to him before.

Such an approach matches the learning style in the culture of, you having to see for yourself and then realize, rather than being told. When I asked about learning, he related that he had been actively taught conduct from his grandparents and uncles "*but just how to be like how to be good people or how to be a good man with other people or something like that, no more.*" However, his father and mother had taught him more, such as learning to read and write in Thai by his father by use of a notepad, and done this teaching with active learning by, "*Also saying and also by showing every way*". Yet his grandparents, and uncles I think, had been involved in learning NRM, he told me "*They not teach us we just learn from we just look at them and then learn from how do they do.*" This was not done as a direct copying at that time, but was delayed

as "*we watched them and then looked at how do they do it and remember.*" So here was more of a passive learning than an active one.

The situation was such that he told, "*sometimes I be there with my brother and sometimes I be there with my brother without me*". Errors were corrected if the learning had not been successful, "*They'd tell you it's not right and then they tell us for the right thing*".

There are several intriguing aspects here. The concept of learning by your mistakes, rather than striving for perfection before attempting something, which stands in marked contrast to many language learners who will not speak until they are sure they are correct in a foreign language. In my respondent's case there was a confidence to let people make mistakes and to make mistakes in front of elders. There is a use of the direct method of context-based learning, rather than a drill or a practice to be later applied. I would say that this approach was also happening in the QSBG, though there was some instruction and job directions were given too.

While I was there, I could come into the museum grounds. In this instance, it was serendipitous that I could come and see the school party engaging in learning. There was a museological aspect too, as the place may not have wanted a museum professional to be looking at them critically and possibly indicating things that could make them look bad to others such as the Thai Research Council or FORRU-CMU where there was some institutional rivalry. However, they need not have worried on that score. He wanted me to get the experience of walking up the hill and through the grounds as a visitor, where I would see the avenue of bananas, planting work, other activities and gain informal learning through this.

I did not see any Karen people in a work context. The Lahu man, Lo-Ue who I saw in Doi Mot was working at the organic farm and a "*co-founding production manager*", but the relationship I would say was not a natural one. There was a deliberate aim by the set-up to empower him and to make him learn things. There was an aspect that his younger brother a "*co-founder of the project*" had been working there and then left to start his own business or as stated on the Suan Lahu website "*now applies himself somewhere else*" (zur Strassen, 2013). So this made it unclear how much that dynamic was affecting things and was not something that I could explore in sufficient depth with my translation relying on zur Strassen "*the co-founding president*".

4.4.4 Plant specimens

Learning by plant specimens was used as by Emäntä Parantaja. She not only kept her own physic garden, and had a store of plants. These she used to instruct me and others about use. This extended to her giving me some specimens and instructions how to use them for myself and other people when leaving her house.

Instruction took the form of sitting in a circle with three others. The specimens were then selected by Emäntä Parantaja and she told us about them. She was able to recognize and explain the plants, plant usage and associated information, which were photographed in their natural environmental context.

In the past, she used to keep her own store for self-learning, but no longer did that. Now plants were mostly kept for use as medicine or food, but some were kept for instruction of others. So these were kept as teaching objects, rather than teaching specimens, under the definition of Heiss (Heiss, 1938), which meant for specific use rather than general principles. A turtle shell had been so kept, which had a practical medicinal use, for blood treatment. There were several gourds, and she explained how their purpose might be for storing soup, and water. We did not

actually do this when we went to the forest, but we might have done as they were in good working order.

I had no other experiences of plant specimens being used to teach. In addition to the stored plants she explained some of the use of the plants in her physic garden; on her own plot of land, a short walking distance away; by the roadside as we passed interesting plants, both by her house and when we travelled to Chiang Mai, should we happen to stop on the journey or outside someone's house. These were incidental opportunities, rather than a planned plant walk. This was done by her volunteering information, but due to a translation barrier, I had to ask on several occasions about what we were seeing. I could see that her mental map of the world was identifying and navigating by plants and their associated meanings rather than as a townie might by material things such as brand names of cars or manufactured objects in the wide meaning of material culture.

I could not explore, if like with myself, that mental map carries a series of associations and stories from her culture and personal history. Such episodic memories in turn are linked to other associative cultural memories such as allotment gardening and herbologies and foraging networks and trails that pass by edible plants, which can be foraged. This associative memory not just the episodic memory alone, which I already established she had, but the cultural and personal cultural memory that it would be good to know too.

4.4.5 Religious rituals

I attended no Karen religious rituals. I did attend a kevcai Hmong ritual in a Ban Mae Sa Mai village house; a Seventh-day Adventist Reformers church service in Ban Mae Sa Mai and Cell Church Group home worship (cf. 4.2.2) in Khun Wang, with mostly Hmong people, led by a couple who were a Central Thai woman and a Romanian man; a Lahu nyi religion ceremony in the forest outside Doi Mot village; and a new house ceremony inside Doi Mot village. Within these ceremonies, there were individual techniques, but it would be hard to ascribe them to learning about NRM. More they had other aspects to them or other focuses.

It would be possible for some of the religious techniques to be purposed for resource use learning, for example the kevcai communion with natural areas or with spirits for guidance. The Lahu nyi religion contains techniques that are directed to forest resources and a complicated cosmology is present in Lahu, Hmong and Karen belief systems that relate to the natural world. But I did not observe nor was told of any specific technique for NRM. For example, though I know that there is repetition of phrases when communicating with spirits and throwing of rams horns, I do not know how that is applied or could be applied for the learning or NRM learning. Likewise, I know that there are spirit trees and that there are stories told about the animals.

Nouri Kisälli told to me when I asked about a bird call I could hear, "*I heard that the old people say that they are very beautiful birds because they have red green yellow and which is the female will be like yellow color and the male will be like red and green, so that is the birds that I really like, we call in Hmong Lau Lai*." and that "*the Hmong people they believe that this kind of bird is like a couple of lovers before and then the just transfer themselves to be the bird and fly away together.*" Nevertheless, there was no implication for him beyond the story as to how he related to that bird. Whereas for trees he told me he would not fell trees, "*Yes because if I want to cut down a trees I feel a little bit sad. I will refuse to cut that … Because I think that if I cut down one trees and other people cut down then each person cut down his tree it will be too much trees so I refuse to cut a tree.*" So this emotional content related to his view that "*the spirit, the religion and spiritual*" was important in the forest, but was not related to an identifiable

technique I could readily describe from a ritual or ritual use despite him recognizing spirit trees in the forest where there are rituals held in relation to forest restoration and protection.

I found clear evidence of rituals being used to extend protection forest concepts more broadly in a community setting. Both the Karen and the Hmong have taken indigenous rituals and used a rites based approach to protect not just one tree, but a forest area as a community forest. This is respectively for the Karen with a birth forest from a birth tree and for the Hmong a spirit tree to a spirit forest (Badenoch, 2011). The uses of these seem to be instrumental and not fundamentally connected to the spirits being there in the first place. As if the spirts are called to the area or created by the imaginings of the people using them rather than people discovering the spirits in their natural situation.

4.4.6 Peer-to-peer learning

I think that peer-to-peer learning is common and like ubiquitous learning, to be frequently found even though it is not apparent to the learners themselves (Yahya et al., 2010). Examples include talking between peers in non-formal and informal learning contexts. A modern version that is very prevalent is talking via text messages, or online chats or comments on social media. All the indigenous people I met used mobile phones. Most of the young ones used internet-based social media platforms.

A difficulty in identifying a peer-to-peer learning technique amongst the constant activities of life is one of disaggregation. For example, in a workshop or conference that has a break for informal chatting that is organized by an expert. Is that break a peer-to-peer learning technique or not? Is it part of the workshop, which is clearly not peer-to-peer? The move to unconferences which occurs in education (Carpenter, 2015) and a culture of more open interactions with instructional models blurs this distinction further. It is fruitless to try to ascribe learning as peer-to-peer in these contexts.

I did not find any clear peer-to-peer learning techniques. It could be argued that the conversations that Emäntä Parantaja engineered with her housewives learning circle (cf. 4.2.2) were peer-to-peer learning techniques. The circle itself providing the forum for the others to share, on an equal basis, their own wisdom and plant lore. So they were engaged in peer-to-peer learning when they had something to share with each other. However, her personal leadership rôle in co-ordinating that circle makes this a suspect conclusion, with an expert in the knowledge relationship being present, not just taking a co-ordinating rôle. When she and other foraging professionals gathered and had such discussions or joint foraging trips, it could be said that these were peer-to-peer learning activities.

I did come across one group that could be described as a peer-to-peer learning group. This was a group of friends who liked fishing. See Box 2 Fishing. This then brings the Hmong Kyak Fishing Club into context as a culturally derived practice in the USA. I would guess that such a learning is gendered and age specific with youths who are males going fishing together. Peer group fishing and taking part in fishing as a collective, group activity as I found in Chiang Mai province is notably different from solitary fishing. More investigation is needed to assess the inter-group learning that occurs with angling. How much is learnt from American practice? Did the American Hmong learn from the Thais, or was this a practice they engaged in, despite living in upland, dry montane areas from shifting slash and burn? Is there a sign of moving to a low land existence with a more riverine way of surviving?

Box 2 Fishing

Angling is a pastime that has several elements to it. Catching food is only one part of it. Also there is camaraderie and competition. When I came across fishing, I asked more about this practice. I wondered if it had been a family taught tradition. In the respondent I interviewed (Nouri Kisälli) this was not the case. Rather the activity was done with a group of friends.

He told me he goes at the weekend for 2-3 hours. He was a passable fisherman, and so motivated to continue fishing. He had learnt to fish by observational learning within his peer group. The group was somewhat cliquey, as new people were not being brought into the group.

He had begun to go in a group of friends when he was aged about 15. Originally he had watched thereby gaining factual knowledge. Having got the conceptual knowledge about fishing he had applied the procedural knowledge by trying with a pole fishing. Later at the metacognitive level moving onto rod, tackle and worms sourced from a damp place as bait.

I found out that the fun of fishing was also connected with catching the fish and eating them. There was some knowledge of fish names. But I was told "*I don't know the Hmong name and also I don't know the English name but I can tell in Thai pla yee sok [(Probarbus jullieni)], pla duk uey [(Clarias macrocephalus)] or pla nin [(Oreochromis spilurus)] also pla chon [(Channa striata)]"*.The Latin names given seem to be the correct ones for the fish (Mounce, 2006).

I was curious to know where they fished and it seemed it was a large pond known to them. This recreational fishing could usefully be developed with other Hmong or even the wider tourist industry if there are sufficient wild fish or a restocking is countenanced. There is an impact on wildlife by this fishing, but how much is not possible to gauge without data on how much and how frequently fish are caught. As they used Thai names this suggested it was an adoption of a Thai practice rather than a practice coming from Hmong society, contrasted with bird names which Nouri Kisälli knew in Hmong, this suggests a transition in the culture from hunting game to fishing.

Box 2 Fishing

When I went to create a firebreak, I noticed that the smaller groups were mixed, but then within these groups many people worked as a couple or three and commonly these couples or threes were gendered groups. The smaller groups would all break together and gather, but if eating would eat in gendered groups. For overall planning, it did not seem that there was a gender aspect that affected what was decided when I was there. People would catch each other up and proceed onto another area to clear, without checking on a gender basis. It seemed the area and experience of prior work shaped the group dynamics rather than any explicit direction while I was there.

5 Discussion

This thesis explores learning with regard to natural resource management, and seeks out distinctive indigenous learning found in its social-environmental context, in Thailand. It is concerned with material culture as well as the intangible cultural heritage of learning, which can then be juxtaposed with other learning cultures for comparative studies (Moutsios, 2014).

Of the many peoples that could be explored, the length of time it would take to do a thorough investigation and cross cultural comparison only a small sample could be looked at. Thus, results to claim uniqueness or special situations are unfounded. What can be claimed is that there are some features held in common in regard to place and peoples encountered during the research time.

In all categories of my taxonomy, around learning, I found what I hoped to find. That is a living tradition of learning, valuation, and usage of knowledge. I found sources of learning that are largely absent in the Western world. The rites based approaches of spirit believing people extending protection from trees to forests and landscape is one. The non-formal schooling of the Lazy Man School and Thai earth building movement with their experimental experiential learning approach are others. The relationship to nature of a herbalist tradition, which gathers wild forest products for medicinal use, persists as a living tradition, not a revivalist one. Learning fora that the indigenous people practice, which we can adopt in other places; aspects that inform on techniques, the application of which to learning we might usefully adopt; and physical locations and venues, which we can supplement with our own knowledge and praxis in designing our physical environment were found.

These all have implications for NRM, though exactly how they might be applied and their efficacy would need to be investigated on an application-case by case basis. How we might do that and enact a technology transfer from indigenous people to others was explored to a limited extent, but was not the focus of this thesis. Operationalizing these findings requires clarification and collaborative action-based research with awareness of all capitals of a five capitals view of sustainability, comprising *natural capital, human capital, social capital, manufactured capital* and *financial capital* (Porritt, 2007), or a similar approach in the future.

Different learning cohorts require different responses. Indigenous people cannot be seen as one cohort. Age, prior education, familiarity with a learning technology, learning environment and learning styles are to be considered in defining a learning cohort. Varied learning cohorts is applicable not only for indigenous people in remote mountain villages with patchy educational histories, but also for application in modernized Western nations with clear educational, institutional and pedagogical development histories.

Questions of application raise an interesting perspective as regards the audience of this work. Who is the audience I am writing and discussing for? Some of the indigenous people I met speak English; the Thai Research Council was supportive of my research. They want to know and maybe apply what I have found. If I am to write my findings and discuss them for an indigenous audience they want to know, what is the equivalent in my society and my culture to contextualize and translate their own discourse, narratives and ideas into something understandable to and for others.

Yet those of us who are educated in Western science, perhaps with masters degrees and almost certainly PhDs or full professorships do not want to read trite and commonplace things seen as 'obvious' and 'givens'. We want new shiny toys and concepts with big thinking or at least something not heard before.

An example is the research I did on street signs. One morning I sat in Ban Mae Sa Mai and watched where there was a sign to see if anyone looked at it. They did not, and my mind soon drifted off to looking and counting the pick-up trucks that went by with workers heading to the fields. They are used as people can legally ride in the back, open carry, without safety belts.

Now really I should have gone to the remote trail where there was a nature related information board and sat there repeatedly, every day for a week when hidden and watched how people used that sign about the forest restoration, perhaps with eye-tracking technology to monitor where, when and how they used it.

People do use signs, but how and when and how that varies in an indigenous culture that is mostly oral is not clear. The signs are used by Thais and farang, but they were not prevalent in this setting. Asking people who live there, and are habituated to the sign, is unlikely to bring a useful answer. Yet we do need to know how useful the signs are; in consideration of the money spent and the time invested in installing and designing them. If I had spent all three months looking at different signs in different villages and no one had looked at them, it would be hard to justify the usefulness of this scientific approach or to write a thesis on it.

Thus, I try to strike a balance between useful-results oriented research and sign staring research. I try to discuss in a way that can be applied by multiple audiences and explore some of the philosophy around learning.

5.1 What is knowledge, know-how and wisdom?

Studying learning scientifically and the praxis of knowledge transfer in cultural contexts can lead to better forestry and natural resource management. There is good awareness of how knowledge (essentially facts (European Centre for the Development of Vocational Training, 2014)), know-how (practical application of the facts (European Centre for the Development of Vocational Training, 2014)) and wisdom (good judgement in application of knowledge (Kekes, 1983)) works in a Western Science-based society. While the theoretical relationship between knowledge, know-how and wisdom and its potential realization is well documented (Anderson et al., 2001), that potential is limited both by institutional policy (Maloney, 2007; Aberge and et al., 2009) and cultural framing (Kosslyn, 2007; Bunker, 2011). The result can be greedy reductionism (Dennett, 1996), with knowledge often presented in a form that is not holistic enough to be ready for practical application in the appropriate setting (Lagae, 2012). The higher cognitive levels and practical wisdom needed to apply the knowledge end up being arcane instead of common to the community (Lagae, 2012).

There is knowledge in the indigenous cultures I encountered in Thailand. The Karen have good knowledge of forests and forest dynamics. Kanjunt (2007) speaks of how the Karen from "*a forest regeneration point of view* [have …] *the best sites because they had the highest number of trees and species and crown cover, and basal area and were highest in all height parameters. ... Many foresters dream of creating a forest like this in 18 years. … Clearly the Karen system is not contributing to further deforestation in Thailand.*" (Kanjunt, 2007:63) He further highlights the ready availability of NTFPs from that forest, something the Karen material culture attests to by siting villages close to or even integrated with the forest. Kanjunt points out "*Diversity is a value in itself, but it is also a value to the people. It seems as if the Karen people are highly appreciative of this, but they would probably express it differently*" (Ibid.:63). From his perspective, "*Traditional Karen management practices aim to rapidly reestablish forests cover for future agricultural use*" (Ibid.:63). Along with this, he feels more "*standards*" (Ibid.:63) should be left "*for the next rotation*", (Ibid.:63).

These latter statements reveal Kanjunt's disciplinary cultural bias. He wants to turn agroforestry into agriculture. He considers trees as standards, and rotation as a part of a silvicultural system and thus is describing them as a part of forestry being practiced on the land the Karen are using, not a TOF phenomenon (United Nations jargon: *TOF* meaning *Trees Outside Forests* or *Trees*

On Farms). Thereby, Kanjunt forces a false dichotomy on the situation by analysis as forestry or farming and not see a more integrated agroforestry. He has the facts, but has not noticed that there is a know-how at work here. The know-how is one of a forest people not a peasantry. The Karen happened to have a "*lack of big trees*" for several reasons. While I do not know the history of that individual plot, Kanjunt is ascribing its history by implication to the Karen, and the way they have managed the landscape. However, this supposition does not accord with traditional Karen practice.

Karen-animist-and-Buddhism religious practice has each person linked with a tree on birth. "*The umbilical cord of a newborn child (dei paw) is placed in a bamboo container and attached to a tree chosen by its parents*" (Badenoch, 2011). That would be their birth tree and due to "*the link between the child's life and the tree's life*" they would not cut it, nor would others be suffered to cut that tree down (Badenoch, 2011). However, when the Karen are forced to stop their swidden agricultural practices and are unable to move location, then the big trees are in more danger. When the Karen are separated from their Karen animism or even Karen animist-and-Buddhist belief, via Christianity or mainstream Theravada Buddhism, then the value placed on the trees is lessened and the protection afforded by belief is eroded. As money comes into the equation a spirituality, that no one believes in or money for resources they need in a static existence could tip the balance into deforestation.

These are not the only factors that may have removed the big trees. The Karen practices of learning about the know-how of forest management means that they would be unlikely to change too radically and cut the big trees down. More likely is an outside pressure. That pressure was revealed to me as coming from the Thai state, via the practice of selling timber concessions, under influence from British Empire timber merchants. So timber was sold, without the Thai rulers asking the Karen concerned, and these mostly Indian and Burmese merchants then felled the trees without heeding sustainable harvesting nor sustainable forestry, but instead via selective cutting, known as highgrading. In praxis, this meant overcutting all valuable trees and more than the concessions officially allowed (Usher, 2009a). Karen know-how was tempered by the wisdom embedded in their culture of being a forest people and the relationship to the plants and animals of that forest. Cutting the trees would be cutting themselves. My research found that, even though the tree-cutting permit was issued over a century ago, during the days of the British Empire the document still had a resonance and import for the Karen people and how they looked on outsiders and their approach to the Karen forest. Such a long perspective is truly a forest people perspective and is related to the Karen-animist-and-Buddhism beliefs as a Karen elder told when he stated, "*We are taught to believe that things will come, not now, but in 2000 years*" (Odochaw in Lindner, 2014:19). The material culture of the document was being used for learning as a cultural artifact and the text on it was of lesser interest than the symbolism of the object.

The Hmong people had a knowledge of NRM. The FORRU-CMU was piggybacking off an already existing sentiment that restoration was needed in the Upper Mae Sa Mae valley. The poor land management had damaged the sustainability of the land and Hmong people themselves had recognized this. They learned from the spirits (cf. 4.3.3); along with outside pressure and criticism of how badly they were managing things, forest restoration was needed. The response was to create a forum, the Natural Resource and Environment Conservation Club of Ban Mae Sa Mai. This forum has expanded to include the knowledge, and the know-how to restore the forest. This know-how was acquired by the Hmong people who value learning, education and hard work partially via the Nursery and Education Center. It now extends into a bird watching club, awareness of fishing resources; possibly, in the future it may extend to tourism and management of the whole biocultural landscape. Is there a wisdom here in this?

My experience was that there was more of an extended household (tsev neeg) wisdom than a collective village wisdom. Each family would decide what it thought was a wise course of action. An individual family might think that a profession based on tourism was a good route to follow. Another family might think that herbologies and foraging was the way. Another may believe that a livelihood growing lychees, tomatoes, and cabbages was the one to focus on. These different moves seemed to be without a coordinating direction. Ban Mae Sa Mai is the largest Hmong settlement in Thailand and this could mean that the functional group size has been exceeded and so common perspectives and collective action are no longer happening, yet in a smaller Hmong village then they might. Nevertheless, in Ban Mae Sa Mai, village elders were respected to a certain amount, but there was a considerable amount of free will in how people might exercise their own wisdom. This extended to religious beliefs and in the past to land management.

As a result, some bad turns of direction were taken by some to grow opium, pollute the water courses and burn in an uncontrolled way the forest. There was a lack of collective wisdom. Kanjunt (2007:63) claims that "*establishment of a secondary forest cover for watershed or community forest purposes*" is less rapid in Hmong areas than Karen ones. This suggests it is a cultural feature rather than just something found in the communities I happened to visit. The Karen, seem to have adopted a more lowland settled existence for a longer time in the history of their people within the area of Thailand; than the more recently immigrated Hmong. Perhaps with time the Hmong will go through a cultural evolution and adopt or adapt to Thailand in a similar way with a stronger community focused rather than family focused culture. To my experience the Hmong seemed more argumentative and fractious (Badenoch, 2008) than the more settled Karen or Lahu. Was this perhaps a result of them being a more patriarchal society? A recent history of disruption which gave a kind of collective post-traumatic stress disorder from the Indochina Wars or some other factor could be argued as significant in the lack of a communal wisdom too.

There had been attempts to build community using natural resources as the bulwark. The *Natural Resource and Environment Conservation Club of Ban Mae Sa Mai* could be said to be a success, as most of Ban Mae Sa Mai participated and supported its efforts. Awareness of the club specifically, was low in the younger adult generation, which shows that generational work needs to be done to make sure the next generation is fully participative in conservation, and especially the management and planning aspects, as a part of their cultural heritage. There are apposite learning techniques, such as the kevcai rituals practiced in the forum of a ceremony by the animists I stayed with. Emäntä Parantaja's attempts to teach her knowledge and know-how in the forum of a housewife group, and her Hmong forest walks shows that she had some wisdom in the value of passing on that knowledge. Her aims to pass it onto whoever wanted to learn in an open way showed a personal philosophy, which could be called wisdom too. She had some techniques for doing this, by show and tell with the plant specimens, paper notes with the plants and the physic garden and ideas for a learning center means some concept of the importance of a venue as a strong center was known to her.

The venue was an important aspect of being successful. The concept of a strong center in pattern language can refer to a strong center in terms of its use in relation to social rather than just physical space. The learning center in Doi Mot provided a strong center in terms of a physical venue and it in turn attracted people to come and operate a learning circle; for farmers from the surrounding areas for organic production; plant knowledge and know-how; and foreigners to come and understand the culture. It is true that a charismatic Lahu person, Jakatae, in combination with a charismatic concerned highly intelligent foreigner in the form of Carina zur Strassen made a dynamic and an emergent property that helped to drive this forward. However,

this dynamic only arrived from zur Strassen's engagement with the Lahu people. Her living in the village and learning the language and culture, particularly the wisdom embedded in the stories the people told prompted her to help them in this particular way. Initially zur Strassen had been drawn there as the Lahu were open and one of them had married a German lady. zur Strassen was also a German-speaking woman and thus there was some level of connection and openness to outsiders, through mutual, cosmopolitan interculturalists.

While I was welcomed by all of the people that I interacted with, from all of the cultures, Central Thai, Hmong, Lahu, Karen and Westerners (farang) I met, the Lahu culture seemed to be particularly open to interactions. There was supportive help to anthropologists and researchers to help them integrate into the society, such as helping the Casidy family build their own accommodation. Hmong society is more closed and restrictive, with families, White Hmong, Blue Hmong and different clan or origins of individuals having their own ways of being and thus at times making barriers to others engaging in their society as equals. This is changing with mixing and modernization to create a common Hmong identity (Vang and Hein, 2015). Karen society defines anyone as Karen as anyone who can speak Karen, and so those that do are easily accepted and integrated. Lahu has been used as a lingua franca in other parts of the highlands of mainland Southeast Asia (Zomia). As a result the society is more disposed to others interacting in a multi-cultural way. Integration of foreigners seemed to be common with little overt pressure to assimilate.

This degree of openness is a wisdom within the Lahu society, but it has risks. While I was staying at a house in Doi Mot, I heard the new fashion in the Lahu society, adopted from Finnish culture, was sauna. Sauna was taking part in a way that was depleting forest resources. Cultural adaptation had been partially driven by the idea of sauna being a business and was not endogenous to Lahu culture. While adapting and adopting this cultural practice, or that of the tourism industry, coffee farms or flower growing looks good from a *help the poor people to stand on their own feet economically* perspective, there is a nuance that is not so good that comes with this. There is an erosion of the traditional, sustainable culture.

In Doi Mot village, one of the Christian Churches was trying to inveigle its way in and convert the people from their traditional beliefs. So far this had been resisted no doubt with some advice from skeptical and aware foreigners. The Church was attempting to do this by bribery of the children by giving them sweets and presents. The village collectively had no truck with this attempt to subvert their culture, but individuals could be tempted. Such a Church organizational strategy leads to a divided community, those who go to church, and those who do not. A divided community will not respect sacred forests, protected by spirits that they do not all believe in. A divided community may be antipathetic to each other and the valued spaces such as communal forest resources.

Solidarity in Lahu society of Doi Mot was stronger than the more fractious Hmong society and so resistance was more effective. The coming of a tarmac road and television have had a big impact on that (Casidy, 2010) society and the presence of a new road often brings a juggernaut of change (Warner, 2016). That juggernaut is bringing challenges to the collective wisdom, not just new knowledge and know-how, with it and it remains to be seen if the indigenous people I met can hold onto those elements in their learning ecology, when new realities question their relevance to life in the future. So far, the wisdom has been resilient enough.

5.2 Practical learning

Practical learning can be described as simple, requiring little preparation, utilitarian and directly relevant to the immediate environment (Vervain, 2013).We would want it to be simple enough for use, without great preparation, minimal paraphernalia and that it is directly relevant to application in the daily life of the learner in their environment. So learning to make a forest management plan is unlikely to fulfil these characteristics, whereas gaining proficiency in how to harvest wild plants with a hand tool is. There is a danger that we would try to conflate practical with vocational and non-academic, to make a division between more complex and simpler activities reflective of splits that are found in other societies. For example, the split between polytechnics and universities is now often transferred to a split between vocational colleges and universities.

There is not a value judgement between these forms of practical and non-practical, both are needed and advanced physical learning, via experience, leading to tacit knowledge may not be practical learning. For example, learning a martial art to a high degree is not practical in this definition of practical learning as it fails on the simple criterion in the definition. Learning to speak a language or make a medicine from varied ingredients could be said to be practical, though Western society may regard these things as more academic.

Why should we care? Practical learning insights can be rapidly applied, easily scale and have big impacts. As low tech, they should have low costs, both in materials to practice the learning and in cognitive preparation for learners to use them. The assumption is that if we can see practical learning in action in indigenous communities, we can see it in other indigenous communities and with other target groups. We can assess the efficacy of practical learning and see if it can be improved on metrics of enjoyment (Thai term: *sá núk*), depth of learning, fitness for purpose, and where there may be gaps in learning prepare materials and methods for coping with those gaps. There is an element of technological evangelism in this. Just because practical learning works in one cultural context does not mean it works in another.

The most practical learning that I found was the Hmong Forest Walks as practiced by Emäntä Parantaja. Here a small group was selected and then they walked through a known area and learnt from an expert about the plants, with a focus on foraging, their personal health needs or possibly nutritional needs. There are analogies for this in other cultural settings. Flower holidays consisting of a series of walks, on Greek islands, have been offered. However, these are in distant foreign climes, and are not regular events, for those concerned with what is effectively tourism. Wild Crete Travel LLC "*seminars*" are run by herbal and cultural experts with strong Greek connections (Howell, 2016), so there is an element of the same ethnicity being involved in the foraging and integration into the local society as with the Hmong Forest Walks. There is also a dynamic of; the leader, an expert; and the learner, who is an interested but amateur naturalist, rather than a peer-to-peer learning in the Crete case.

However, in the Hmong Forest Walks the practical learning is also applied. So while there is a learning out of interest aspect, there is a utilitarian aspect that was missing in the others. The utilitarian aspects of health, sustenance or income were absent as the focus was instead one of hedonism. If I think about how I have walked in the forests of Finland, and how I do that now, some important aspects reflect on the Hmong Forest Walks experience I had. Originally, I would have walked close to a trail, where others have walked and now I know how to walk off the trail. Walking off the trail means experiencing a wider variety of microhabitats and thus experiencing a better section of what is available in the forest. I have always looked to see what

is in the forest, but now I look more to see plant associations rather than individual plants repeating themselves during a walk. Aspects of phenology and utilitarian views on plants were always in my mind before, but now there is a greater emphasis on this than just the beauty of nature, or value of timber.

Making Hmong Forest Walks a practical learning for others can happen with a small community garden, a private garden or possibly even with no garden at all in other communities and societies. The most practical aspect of Hmong Forest Walks is that anyone can start to do them, if there is a small interested group. Collecting plant specimens for a personal herbarium is a technique that can be applied here, but must be discouraged, as Emäntä Parantaja did, for reasons of nature conservation, as one Central Thai correspondent told me she learnt from her time in Denmark. Thus for me a better technique is to collect them as a digital herbarium. Some amateur photographers may take pictures, and if bird spotters may do this to some degree too. However, the using of the pictures only for lectures or a stamp collecting approach is not quite the same.

Taking the pictures to show the associations of the plant and the usage of it would be a possible technique developed from the Hmong Forest Walks. Just as fashion has changed with portrait photography, so it could change, to help people curate a digital herbarium. Social media offers a way to share the herbarium with others using folk taxonomy, and user-defined categorization. Thus, indigenous languages and varied ontologies can be employed in an ethnobotanical way.

The Thai earth building movement was very practical re learning. Jandai himself happily ignores recommendations and builds in new ways for the joy of discovery. This experimental, experiential learning approach is prevalent in the movement that he helped to create. It is there with the Lazy Man School, where it is very much ad hoc learning, but with the chance to explore learning where relevant to other things of a practical nature. While there were other fora and several techniques, they are not so readily adaptable and need more preparation. They would not be learning "*around the home*" and so would not meet the definition of practical learning. That does not mean they are not valuable. They could be adapted to other indigenous cultures if there were similarities and assessments. For example, learning about the spirits and mapping the spirits and associative land uses, learning about where the village boundary lies and what can be done where inside and outside it and learning about resource harvesting and restoration are all important. They all involve larger groups of people sharing something in common. A shared awareness of beliefs, boundaries and the taboos and permissions with those areas and uses are all learned. Nevertheless, as social constructs they require societal learning, through institutions and are not so easy to generalize and then apply, as structural factors need to be accommodated too.

We may recognize that Hmong society is restoring and protecting the forest, Karen society lives in an integrated way with the forest environment too. Yet we cannot claim there is a common Hill Tribe way to looking after dry upland mixed evergreen deciduous forest. We have recognize Hmong society is using systems of control that may be patriarchal, elder and household dominated; whereas Karen are using a more matriarchal approach, that regards the natural resources, as part of their extended kin network with which they are fully integrated. A Karen elder stated "*all living things as having its own life force* [... so we] *cannot imagine we can destroy any living things at all that's how live like that and we serve that way of thinking in the forest*"(Lindner, 2014:31). To this general conception of the value of an individual tree, the concept is extended to a spirit forest (S'gaw Karen: *sei dei paw*). That extension has come about in the Karen case by a newborn ceremony, which directly connects a child's life force with a tree's life force now being repurposed from a tree ordination ceremony (Thai:*buat ton mai*)

derived from Buddhism (Badenoch, 2011). The Hmong spirit forest is not based on the same life force relationship.

A Karen man keeps a tree, because it is his blood brother; a Hmong man, because his shaman tells that is what the spirits want. Both may feel a sadness should the tree be cut down, on a human and emotional level, but their fundamental value systems are different re their same instrumental value over not cutting the tree.

5.3 Community led learning in South East Asia

What is a community? A community can be a peer group, a village, the whole of society and even several societies together. A community of interest would be professionals, and increasingly semi-professionals with amateurs too. In the case of NRM, it is quite important that the professionals that are making a living on the land are learning some aspects in common.

In the European Union, there have been agricultural subsidies, based on common usage of the land. Treatments applied through silvicultural measures, chemical intervention or even broad-scale changes from opium growing to tourism or vegetable-based distant food production to nearer to urban mass produced foods which serve a closer to market demands rather than geographical proximity aim, all require a much larger scale of learning.

The larger scale of learning does not have a clearly defined terminology, though it could be called *macro learning* (Hug, 2005). I mean at the macro level, which is at the level of society. It is distinct from collective or system learning (cf. 4.3.5). It is most likely to be formal education and structured with a common curriculum. All these mitigate against the flexible micro learning (cf. 4.3.6) which smaller groups such as individuals and families engage in (Hug, 2005; Hug et al., 2005).

Community led learning is not always obvious, as it is ascribed to fashion, or broad scale cultural shift. Yet this learning is happening with a community led approach. Community led implies meso level learning with appropriate localization. Say anthropogenic climate change is a real phenomenon, and we must really adopt the transition towns approach; REDD+ (UN-REDD Programme, 2008) has to be implemented across the region; or when we decide to tackle the Asian Heat Haze (ASEAN, 2002); then learning tailored for one indigenous group or for one small community is not sufficient. A societal perspective is required for application in diverse environments. Learning should be unbounded. The relevance of a piece of learning in one environment is often relevant in another. For example, awareness of how group dynamics function in a virtual world has direct relevance for study groups that function in a community of interest, meeting in real-life.

We need a broad pattern or collection of pattern languages that we can apply across communities, which means overall at a macro level, but within a nested hierarchy. We need these patterns to be applied at the smaller community level, perhaps the village or the ethnos rather than the political construct of the nation state. Thus, we must look to see if we can find patterns between the peoples researched that might be useful in these instances. I have not done enough research to be confident that here I can describe accurately those patterns that can scale: such as building a new village; or altering the whole food chain from production to disposal, in a circular economy, with a cradle to cradle approach.

Despite this limitation, I do see some hints where I think pattern research might find some of those patterns and pedagogical patterns. I think the history of the development of pattern

research means we can very readily find and apply in a fractal way appropriate design to the built environment. We can find learning buildings that have a pattern we can apply throughout South East Asia. We can find housing, and then villages. I am not sure if we can find patterns for cities or larger human settlements. With those learning buildings come patterns for the learners within them, and the learners in the surrounding areas. These shape the use of the land and perhaps lead to patterns of transportation, accommodation and service provision. Naturally, this means patterns can be found for NRM, but the search is only just beginning.

5.3.1 Learning for children and youth

I am sure children, and how and where they learn from, has gone in the wrong direction in many Thai schools. I am sure that it is not working for most children, in indigenous communities, who want rural and connected existences. I am doubtful that it is leading to good NRM. Part of my doubt, comes from the relationship that formal learning is creating with the natural world, and the world that the young people will be forced to depend on as adults. The juxtaposition of indigenous learning with modern school systems makes this manifest. The children who are being failed by the modern systems are not necessarily being well served by the indigenous systems. We lack any kind of investigation or inspection, which looks at these properly, with a fair comparison of the situation in Thailand.

Evidence that the indigenous system has worked well, can be seen in the Karen villages with their good environmental integration, and well-functioning agroforestry practices, when the learning for most was not via the schools. The vociferous defenders of the non-school way were the children of the village elder, who learnt this indigenous perspective as children.

However, counter examples are the Hmong villages; where the "*forest is in a bad condition*", by Khun Wang village; and in the Upper Mae Sa Valley. Emäntä Parantaja, who despite coming from a herbology family background and regularly going foraging as a child, was then involved with chemical-based agriculture and needed her mother's healing in her youth. Perhaps this was so, as she had her education from schoolbooks instead of from nature and the family, so did not take on the indigenous perspective. However as an adult she did. As an adult, she reappraised and went in the indigenous direction. So it is not a given that an indigenous learning environment will lead to a more sustainable way being followed.

In Ban Mae Sa Mai, outside influence from a demand for drugs and a materialistic money-based economy, was causing damage to that village. Nouri Kisälli did not want to cut the trees and had gained that perspective from his cultural background, as a child from his elders, even though he had gone through the schooling system and gained a degree. So here, the formal schooling system did not prevent an indigenous wisdom being practiced. However, if the adults are not displaying or telling narratives with wisdom in them, then the children will not learn it. Then those well educated in the Thai educational formal institutions, will leave the community; those less formally educated, will be less educated in the other things they need to know, to manage the land and exist on it in a sustainable way. However, there is not a dichotomy: indigenous education good, state schooling bad. There is however, merit in indigenous ways that should be integrated into mainstream education.

The village schools in both the Ban Mae Sa Mai and Bang Nong Tao are developing programs that integrate a different approach to the schooling. Now the schooling has more of a local community approach to it. Schoolchildren took part in planting days in Ban Mae Sa Mai. There is awareness of the communities' forest based cultural values by the schools. It is not possible

for me to assess if these are satisfactory or need improvement. However, it is possible to say that the schools have not worked as well as they could with the wider community.

This is partly based on what the conception of a school is and what rôle it should play in the wider community (Luminen et al., 2015). Is it a village school for the children only at school time? Alternatively, is it a learning and community centre with a varied range of activities and learning with co-learners and partners in different agencies and of different ages, only one of which is the children gaining their mandatory schooling? On this concept hinges the relationship with the natural resources and the wider use of children in their management. If the children are led by the teachers to see farming as something for ignorant bumpkins (Thai: water buffaloes) to do, and somehow inferior to the well-paid teacher in his nicely pressed uniform with medals on it, that attitude will reflect on the treatment of the resources. If on the other hand the teacher is involved in setting nature trails, planting for forest restoration, and the school interacts with classes run by parents and indigenous experts as a part of the curriculum then a different view is created.

There is precedent for hybrid schools which include good indigenous learning (Zehr, 2007). In the USA and Canada, many of the first nations learnt from the neglect of their traditions and tried to reconstruct and re-introduce elements into their curricula. The Navajo Nation has the Diné school (Navajo name: *Tséhootsooí Diné Bi'ólta' meaning* the Navajo school in the meadow between two canyons). In Diné (Navajo term: *Diné* meaning Navajo) school language, culture and problematically for some, religion are conflated, as "*some parents confuse culture with religion*" (Zehr, 2007). There, is an element of livelihood in these hybrid indigenous education systems, which is relevant to how NRM can be integrated into rural upland Thai ethnic communities. For the Navajo this extends to degree level with Navajo Pedagogy informing the "*Earth systems curriculum*" (Morgan and Semken, 1997) and "*The Diné Educational Philosophy (DEP) and its incorporation into the Associate of Science Degree Program in Public Health at Diné College*" (Garrison, 2007).

Another place where a different attitude could be engendered would be Kindergarten. I was not able to explore the Kindergarten level for children in Thailand. However, there are several tried and tested pedagogical concepts in use around the world, elements of which could be purposed for the Hill Triber communities. *The Nordic Social Pedagogical Approach* (Ringsmose et al., 2016); *The Te Whariki Approach* (Lee et al., 2012); *Bilingual Concepts* (Friedrich et al., 2014) can all be culturally appropriate. Various nature, forest, science or arts themed Kindergartens' individually developed pedagogical concepts, which may be close to schools of thought such as *Steiner Waldorf* (Nicol and Taplin, 2012) or *Waldpädagogik* (Bolay, 2015), offer suggestions useful for adaptation to the indigenous context in Thailand.

I encountered the NGO, *Culture Canvass* in Chiang Mai, which had done a project with young indigenous children. However, there are other exemplary precedents for how young child TEK-based interactions might work. There are youth groups, particularly the *Woodcraft Folk*, which are "*A movement for children and young people, open to everyone from birth to adult. We offer a place where children will grow in confidence, learn about the world and start to understand how to value our planet and each other*" (Woodcraft Folk, 2014). These internationals movements have spread to Thailand from Europe.

These movements (viz. Woodcraft Folk, *Kindred of the Kibbo Kift*, and *Wandervögel*) grew out of an antipathy to the current of European civilization (Wollenberg, 2001; Martin et al., 2017). In the case of the indigenous people, the education systems are not growing directly out of an opposition to civilization by members of it, but an appropriation of structures such as schools,

youth groups. Thus, they are an adaptation of wider civilization to be localized to the indigenous people's *own kind of civilization*. This is evident in the culture by the adoption of varied writing systems. The wider civilization (Thai: *siwali*) in Thailand has been an adoption of European civilization and is contrasted with the Tribal cultures.

In Thailand there is one day a week given over to the National Scout Organization of Thailand. "*Because, Scouting is part of the school curriculum, the students have to sit an exam at the end of each term*" (Barrow, 2015)"Scouting Activities":para. 1. "*Thai Scouts come from all regions of the country and participate in a variety of training activities … particularly the environmental and natural conservation*" (Ibid.: para 2). Thus, there already is a bushcraft element, which fits well with community gardens and amateur naturalist activities. Other organizations, in Europe, can be of relevance to the Thai context. England has the Young Farmers who "*provide an opportunity for young people to develop, to learn and to enjoy themselves by offering a diverse, fun and educational programme of activities planned by members, for members*" (NFYFC, 2013). They work with "*with young people aged from 10 to 26*" (NFYFC, 2013) and cover well high school and early career professionals who may end up in NRM. Some countries run equivalent young forester groups. So, for the youngest children, to young adolescents, youths and young professionals it is possible to find models which include learning and NRM more in accordance with schoolification or social pedagogy as suitable to life-stage and local conditions (cf. (Bennett and Tayler, 2006)).

Thailand has an actor-network, which can work with such created groups via the World Organization of the Scout Movement, the Royal Forestry Department or the universities. There are NGOs that do work with Youth in Thailand already, for example Greenpeace Youth Thailand, has locally adapted a model from elsewhere and deals with natural resources (Muandao, 2014). Furthermore, there is an institutional environment, which specifically supports youth engagement. There is a *National Child and Youth Development Plan*, mandated *Youth Councils* and a *Youth Commission*. Youth is defined as 18-25, so with children defined as those under 18 (YPP&YPL, 2014) there is scope for extending provision to younger ages within the remit that the 2007 *Youth Development Act* defines.

5.3.2 Life-long learning

In English, we often say, '*you cannot teach an old dog new tricks'*. But you can learn new things at any age, as the University of the Third Age shows (Formosa, 2012). Joni Odchaw the Karen elder I met said, "*even though I am now old, and older people are less active, I am still active"* (Odochaw in Lindner, 2014:17). The kind and mode of learning and what you learn should vary with life-stage. The consensus today is that, a youth needs to learn general skills that can be applied in an adult world of work. Whereas a retired person does not need this, they can learn other skills to help them keep alive and vital when they are no longer in the situation they once were as a part of society (Formosa, 2012). The concept of ageing and still keeping vital is called *active aging* (Kieninger, 2014). It can be seen in a study of mountain dwellers in Japan that active aging can continue into the 90s and involve growing and harvesting food by such elderly people if sufficient support is there (Kieninger, 2014; Prochaska-Meyer, 2015). The active aged can still produce new outputs, such as poems, and still learn and teach.

As indigenous people pass through life-stages, they have associated responsibilities, which affect learning too. In Doi Mot, this was revealed most sharply. The older Lahu girls were keen to learn and enabled to do this when an elder well versed in plant lore was willing to run a class for them in the Daveyo Bamboo School. Unfortunately, the learning required by the younger children was not the same. They needed a more immersive, action-based learning experience,

as they were not socialized to the sedentary learning, the plant lore learning class format required. At least elements of physical interaction like running around were needed before a sitting down exercise could happen. A Hmong Forest Walk or another walking technique might have been better.

Being taken for a walk through nature by an educator is something I (aged 7) recall doing in primary school and have in turn done for a minority group in Austria (with a KinderBOKU project). Both these learning experiences involved production of edibles from wild foods. Such an approach could be applied to the Lahu children, where foraging via walking through the forest would be followed by food production. It would be possible to do some food production around a Lahu Learning Circle with learning and playing time, even if the children had spent time in formal schooling that day.

In the Lahu Learning Circle as the older girls became women, and often soon after mothers, their new life-stage meant they were no longer able to keep learning as they had been. Then the kind of learning that Emäntä Parantaja had benefited from, that of herb lore as a practical matter applied to post-natal maternal health, baby care and family feeding was needed. zur Strassen had first thought of developing Kindergarten services with the young women of Doi Mot, so there is a practicality to this idea. It is reflective of how children are cared for by different peoples. Margaret Mead found in Samoa there was a hierarchy of the youngest children being looked after by slightly older children, who in turn were supervised by those slightly older than them (Mead, 1971). Similar pupil-teacher arrangements existed in the 19th century schools in England (Stephens, 1998) and the USA.

Later still, comes a profession and learning as a co-learner that could be shared with others in the rôle of an elder. These could be adapted to the Lahu learning circle too. Thus, the learning building would be a resource for all ages. Not just the young children as a baby-sitting venue and farmers that come to learn about organic practices and organic accreditation as seemed to happen in the Daveyo Bamboo School.

The life-stage aspects of childhood, adulthood and elders is recognized with its different needs by traditional belief systems (Wigington, 2012), specifically for the Karen (Marshall, 1921), Hmong (Peng, 2007) and Lahu (Du, 2013a), although where the transitions occur varies. This is I think why the Lahu give so much status to those with children, a status which is then lost when the children grow up. Empty nest syndrome affects the status of Lahu adults, though they have a measure of retirement and loss of decision-making power in traditional societies, they still have wisdom and know-how that can be shared with younger generations.

The interaction between generations and learning was shown in Hmong society, where the place of elders was crucial in setting overall tone and 'conduct' rather than the minutiae of day-to-day praxis. Practical skills were being learnt from parents, and grandparents were in the background. This is surprising as the expectation would be that the learning would come from the elders and not the parents so much. There is much made of the wisdom of the grandmothers in indigenous communities. Grandmothers and great grandmothers are being supported to learn and share learning with an international project called Learn with Grandmother which is "*using technology as the bridge*" (Wood-Gaiger and Learn With Grandma, 2014). Yet in many cases the elder people are being marginalized or rather their rôle in intergenerational learning is not as expected (Wood-Gaiger and Learn With Grandma, 2014). This is exacerbated by the thralls of modern society, which push children into formal education. This may be boarding schools or at least so rigid that the time for being around the family and learning from them is heavily restricted.

Older retirees such as Naeng, a major instigator of community natural resource management due to his involvement in the Ban Mae Sa Mai Conservation club and his work at the Nursery and Education Centre for Chaing Mai University Forest Restoration Unit would have much wisdom and practical experience to share. However, if their learning is not valued and a bridge built between the generations there is a danger that their skills are lost to future generations. Naeng himself was positive about the future and still had ideas, so he will go on learning and teaching. Naeng was known to younger Hmong men, who came to celebrate his retirement. They will go on learning from him in informal ways.

5.3.3 Learning for natural resource management

Learning should be context-based. This means based in the social environment and the physical or natural environment. For indigenous people in Thailand the basic settlement location will be a village. The rural indigenous communities have a relationship to nature mediated by religious views. Christianity commonly has a different view from kevcai Hmong, Lahu nyi religion or Karen animist-and-Buddhist beliefs, which are more embedded in nature. There are some strands of Christianity, particularly the Celtic and the more recent Forest Church which are more embedded (Stanley, 2013; Nita, 2016). Theravada Buddhism moves away from the Thai Forest Tradition, which is closer to nature and better interacting with it.

In Thailand the presence of shamans and ceremonial ritual spaces in Hmong, Lahu and Karen cultures shows that the natural resource management (NRM) can still be embedded in a religious tradition, which is respectful of the natural world or even so much a part of it that there is no separation. However, to my mind there is a clear separation. The spirit trees and consequent spirit forest the Hmong have are outside the village, not a part of it (Siriphon, 2006), the Lahu clearly have a boundary between the village and the forest and the Karen were perhaps more of an exception when they lived integrated with the forest and home gardens. This means that learning about those natural resources has to be different between the Hill Tribes. Going to another space, even a conceived one has to happen before the learning can happen in some cases and in others, it truly is omnipresent. That space, can be created by learners working together to bring the natural world into the home world. This makes it practical.

The Cell Church Group, and Housewife Group that I explored in Khun Wang is a model that worked well for learning in practice for White Hmong women. While I and one other person were men, the majority that seemed to be taking part were women. The majority in the past who were engaged in discussions were women. Here the function of the group was focused around practical learning. There was communal cooking, in common with talkoots (Paterson, 2010; Botero and Saad-Sulonen, 2013). There was gardening with the communal gardening, as found in several cultures for integration within subcultures and ethnic groups. There was discursive time to explore usage for applied plant knowledge in the form of herbology. This provides a possible learning circle method that is similar to that seen in the Lahu Learning Circle. There is a crucial difference from the Hmong context, which was that the Lahu Learning Circle included an elder man with younger women and children. For the Hmong group the learning was closer to a peer group and peer-to-peer learning. Gender dynamics have played a part in Hmong women being open to sharing information, with other women able to participate more fully than when men are present (Symonds, 2014). A flatter structure existed in the Hmong group because the participants held certain commonalities as significant. That the group had not had long-term success could be seen as a function of transitory nature of life rather than a failure of format. With better support and connections to several groups there might still be a functioning group.

This cross group fertilization may work for NRM learning. In South Lincolnshire, Friends of Bourne Wood benefits from participation in its activities by people who work for the Woodland Trust in Grantham, Natural England in Peterborough or the Lincolnshire Wildlife Trust. A similar multigroup presence could function for the Hmong, when maybe a family has members in the Ban Mae Sa Mai Natural Resource and Environment Conservation Club, participates with FORRU-CMU activities, and one works at the Queen Sirikit Botanic Gardens (QSBG) and takes part in a fishing group. I saw this with one Hmong family. If this is common and supported, then the family structures can be useful for helping people to better manage natural resources.

In the case of the Hmong, developing a Women's Learning Circle can be a good way to develop this. Similarly, a Men's Learning Circle would have to consider what would be of interest to men and NRM. Learning and interaction does not have to be gendered or age cohort related. The Women's Institute functions across ages and the gardening clubs in England are not gender restricted. However, my observance of both of these groups is that in theory, they do not have to be age related, but in practice, they often are. Men and women often want gendered spaces. Men and women often want to be around those of a similar age. This must be taken into account in Hmong society, where this dynamic seems pertinent. In Lahu society there was less distance between genders, with childcare for example being equally gender distributed.

As well as the group participant profile, it is important to consider, what the natural resources are managed for. If for food security, then agro-forestry or wild forest products need different considerations over time. If for revenue from crops, then the soil health is to be considered. For amenity value or, as a tourist revenue generator, then moderate silviculture is needed to keep the visual value for recreational purposes. As a source of a spiritual home and power, then the appropriate species-mix for a grove over time is needed. Forest resources may be protected forest or forest preserves or even as a protection forest to protect the villages and watercourses so that management is done not only for instrumental reasons, but also for legal ones.

Climate-change mitigation and prevention needs a plan that is more than local. As unmanaged resources can have an economic cost, degrade and thus have a loss of utility a kind of forest protection is required for others. Management is required, even if it is close to nature. These focuses will affect which techniques and fora are used to some extent. For example, as a source of power, and to keep spiritual areas heterogeneous, requires that there is a learning about spirituality, where to recognize spirit trees, how to site houses and which areas can be used for agriculture or not.

For the Karen people knowing the, not ownership, but the special worth accorded to the trees is akin to the veteran trees with tree preservation orders in Western culture. Learning this in a way that is consistent and valuable to others requires an awareness of tree growth dynamics and population structures in the communities concerned. Human, tree, and concomitant plant associations must all be accommodated in the assimilated information as part of living as an integral part of the forest.

This leads not to leave it alone management, but also some other aspects in how learning takes place. To learn the map of the trees and recognize them as individuals in their own rights is different from learning generic trees of a certain age. This can happen only in context of being in the places with others that know. Therefore, learning is moderated to be family or small-group based. Land management is moderated to relate to certain groups being connected and looking after their patch. The outside world has seen the Karen as living in a transitory way of swidden with abandonment of the destroyed forest when relocating. The Karen find this

perspective alien and instead say "*our perception and the way in which we carry out our life … we do at the time what the government said it was slash and burn, but actually it's … shifting cultivation*" (Lindner, 2014:8:34). Learning instead is around the idea that the cultivated area will be returned to and so awareness of all of its characteristics serves a practical purpose.

This mediates the community dynamics and this controls how that learning is organized. A school board must contain elders from the village. A youth council or youth group must relate to the elders somehow in some kind of forum. This can be informal meetings or it can be more structured and planned. Thus, a community structure is created, which can then interact with the institutional framework on a local level, to be supportive of that learning for natural resource management. Wisdom of past conditions is needed to plan for future actions.

Thus, we must consider the application target of the learning, the fora and venue where the learning takes place and the profile of learners. Through this process, it is possible to co-create a needs-led approach to learning. That can be a community need, such as the Lahu learning center at Suan Lahu near Doi Mot, which recognized the need of livelihoods and healthful co-existence. Another possibility is a nature need, such as the forest restoration in the Upper Mae Sa Valley. Additionally a social need, such as the Housewife Group in Khun Wang met. More probably, a mix of all those needs being met to some degree is found in the reasons why people do participate. Having identified the needs mix it might be possible to construct a matrix to plan for those needs to be met and this can suggest which patterns can best be applied to meet them. A learning building pattern, a pedagogical pattern or a sustainability pattern on environmental, financial or other capitals can be applied.

In the case of the FORRU-CMU, the financial capital has been considered and the model is one of revenue from grants that is being followed, with a venue of the Education and Nursery Centre and a pedagogical pattern that works on hierarchical education rather than a peer-to-peer format. This has been effective as the learning has worked with the Hmong community there and the forest has been restored. However, another learning cycle could interact with this learning cycle and compliment it. This could be based on the Hmong Forest Walks and be more indigenous and endogenous in origin.

The different cycles could complement rather than conflict with each other. This works if the correct FORRU-CMU led cycle is one that works with the patriarchal male aspects of Hmong culture and the Hmong Forest Walks works with the female-based housewife group. Further cycles could be developed with youth work, school pupils etc. It can be seen that the interactions between these help to make strong centers. A strong center affects other features in the community, such as the use and upkeep of the building heritage, the interaction and usage of farming spaces and the social dynamics of the village. Instead of a fractious argumentative village, it becomes a supportive mutually reciprocal arrangement that manifests as an improved society and natural resource ecosystem. A lack of these things can be seen in the village and how it looks, the degradation of the forest, the poor state of the building upkeep etc. Learning for NRM means learning for community functioning.

5.4 Culture specific learning

5.4.1 Culture specific learning: Karen, Lahu and Hmong

There was an awareness of a need for culturally specific learning in Ban Nong Tao. This had led to the creation of the Lazy Man School. It was functioning with the village school and the

project being run by Chiang Mai University as collaborative action-based research. The Karen people themselves had reached out to the wider world as they saw that their wisdom and learning was needed by others.

Their elders were taking part in international scientific conferences and others were gaining learning and sharing learning as co-learners. There was a long-term cooperation with the local university and attempts to reach out to other learning institutions (Lindner, 2014). This extended to an action-based approach from the Karen themselves. I saw an example of this when enclothed cognition (Adam and Galinsky, 2012) was being explained to me, as speaking truth with traditional shirts worn at the same time. The shirts should only be worn when acting according to Karen honor. Another example was when I was ill; I was taken to see where a tree was, to get some leaves from it as a natural medicine. I was not just given the medicine, but shown how I might treat myself.

Learning was happening in a temporal and needs-based context. It was immediate and practical microlearning. This means that arranging learning in a Karen society could be done that way for managing natural resources. A practical course and practical management of say a forested area could take place with direct involvement. In the Karen situation, the Thai earth building movement was obeying this practical learning. A place was being built for people to live in. It was in that village and the awareness of situating it in the landscape for natural resource usage and utilities were specifically considered in the process. Similarly, the home gardens were being practically taken care of, as were the cattle and the rice farming. The village school was transitioning to be more reflective of the needs of the local people. It had been challenged, over the separation that made a separate secular institution, from the prior integrated ways.

Was this different from the Lahu and Hmong learning though? I would say I have too little information to say with a high degree of confidence that there is a difference. A difference that could not be ascribed to the individuals, or family habitus of those Karen people I encountered, their particular religion or that village of Ban Nong Tao, which may have been unusual in some way. However, there is a difference which further investigation may confirm is material. That is the Hmong would be more guided by the ancestors, elder relatives and clan traditions. If kevcai Hmong animists, then the spirits too. This guidance would lead them more to a specialism, rather than an integral multi-skilled culture. Therefore, an individual would focus on basket weaving, farming, or mechanics rather than develop a general competency in country skills as a jack-of-all trades.

This is a cultural predilection and not a given that every Hmong person may follow. This manifests in a difference in how learning might be approached via an expert led process in Hmong society more than a self-actualizing autodidactic process. In Karen culture, I am expected to experiment and learn for myself what is relevant for me, but in Hmong culture, I am to look and copy the elders and my family tradition.

Therefore, a curriculum designed for a Karen culture setting may be more mixed and less disciplinary. A transdisciplinary approach makes sense. Therein a learner would be learning about agroforestry practices as well as stand dynamics. In a Hmong context, it makes more sense to learn about agroforestry and stand dynamics in a holistic, as separate holons of learning. Then the integration in praxis comes later under guidance of an expert or elder. In Ban Mae Sa Mai, where Naeng ran the Nursery and had been leading the Ban Mae Sa Mai Conservation Club we see an example of this. Both Karen and Hmong could use microlearning, though the cognitive process dimension tends to work better with the more narrow disciplinary approach than the eclectic one.

Lahu society I cannot gauge, or if I were to create a spectrum between self-directed learning and expert directed learning, I do not know where Lahu society would be on that axis. What I saw in Lahu society was a man (Jakatae Jayo) who learnt from direct experience of a coffee farm and later his brother came there to participate and learn.

The siblings had learnt in the same context as each other, but have different personalities and are not driven to follow the same path. It seemed to me that Jayo's brother wanted a steady job to support his family and so was not bold and open about being ambitious in a way that might jeopardize his place there. For him, thus there was not the element of co-creation and learning that his brother had, as the farm was already established. Jakatae in contrast states that he wants to co-learn by sharing and is not content just to do a job (Da We Yu Hills, 2014). His co-learning is a Lahu way, where everyone benefits from the learning via him sharing and those learning from him also sharing what they know. zur Strassen had a clear idea of the wider society that the coffee farm would interact with and so shaped the learning to some degree to make it purposive. She was quite successful at doing this as Jakatae's successful projects demonstrate.

Having learnt the language and culture and become integrated into the village life she was able to act as a bridge between cultures. Lahu culture seems to offer this way of learning in cooperation and collaboration. However, I cannot say that the other societies do not offer that. For me they were certainly available. I am quite welcome, to go and stay with the Hmong, Karen and Lahu people and to learn with them, from them and to teach them. As of now, invitations to come and stay are not based on money but solidarity and sharing. In respect to learning this means, all of these places offer the chance for learning in collaboration.

A collaboration might be a short residential course at a university, a short stay for a student doing a master's thesis or development of a project around some feature, like the heritage buildings in a village. A practical project could be to work with a local expert in plant lore and herbologies to put useful plants back into a restored forest area. Other possibilities would be to run courses in the Lahu Learning Center or Hmong Forest Walks, which are concerned with practical knowledge dissemination for the communities so concerned. These could be reciprocal with other indigenous communities or non-indigenous communities. Would the form of such collaboration manifest differently between the Lahu, Karen and Hmong? Not necessarily, though a Hmong form might be more centered on a specialism and a Karen form more location specific to be successful.

Learning here is co-learning in a cultural context. Therefore, it can be for indigenous learning for NRM. The cultures would be the respective indigenous teachings, which would analyse effective land management or forestry practices. They would set their own standards as to learning level, and what should be in the curriculum. The communities would set the educational philosophy that comes with that learning, the practical steps and the interchangeability and how that is assessed with other learnings. This is a more peer-to-peer approach than a hierarchical one with exam boards and decisions being made in this way.

There is a precedent for this, when we look at High School Diplomas in the USA or the Duke of Edinburgh Award Scheme. The high school diplomas can be awarded by Navajo society and the requirements can be reflective of Navajo values and philosophy around holistic learning. These diplomas; and associative degrees awarded at the Navajo Diné College, are equivalent to the Regents Diplomas; given by New York State for graduating high school; or associate degrees from The City University of New York (CUNY). The Navajo course includes a practical element and there are options to study uranium issues, and other land management related

aspects. The same could apply for NRM, agroforestry, agricultural learning and other fields pertinent to villages and settlements in Southeast Asia.

This concept and idea works between the different indigenous groups that I met. They all have ways to live off the land, construct property and ways of keeping sustainability viable in regard to trees, watersheds and fishing resources. There may be commonalities in these, for example, the fishing tackle, bait and praxis is probably quite similar between the groups. Alternatively, there may be differences; the ways that the houses are built differ between the Hmong, who build on the ground; and the Lahu and Karen where constructions are on stilts. Yet again, they are different in architectural style, whereby the Karen have sturdier wooden constructions. The requirements from the land vary between integrated villages or separated villages. Thus, such differences, which are important to the culture, can be recognized within cultural specific accreditation without losing the aspects of diversity, but also maintaining the recognition of important features between cultures.

Development of such a program could be done co-creatively with any of the groups. Thai society is very hierarchical, so even if indigenous sub-cultures may be involved, participants may still expect a hierarchical form in making it happen. Being aware of that socialized institutional arrangement can allow learners to be freer to question. Questioning is a necessary part of learning in my view. Hmong society is respectful and deferent to age and so it maybe that there is a cultural reticence to speak out, so this aspect of learning praxis would need to be built in. Techniques such as direct questioning and structures to make people speak out in a confident way need to be considered. Observation, rather than questioning, means any practical activities have to allow observation to be clear. This has implications for how learning is broken down in a lesson.

It is expected whole things will be presented first, explained and then copied. This is very different from, just being given preliminary tips to get started, and then during the process more information for refinement, counsel given by instructors; or learners having to recognize and verbalize deficiencies in their praxis or awareness, to ask for more information. The Kruger-Dunning Effect (Kruger and Dunning, 1999) shows how this can be problematic. If learners think they know too much they assume they do not need to ask and if they really do know a lot they estimate others know a lot. Silence can be taken for understanding, and constantly questioning can be taken as being not secure.

These are cultural and individual responses to a learning situation. A co-learner who knows a lot may ask others as if they are ignorant. This can be done in a self-questioning way to make knowledge stronger, or to help others learn where there are deficiencies. Some indigenous people may use these techniques too. I was asked very few questions by the Hmong people, only when I asked them if they had any questions did I get some questions. Yet the Karen people asked me questions and posed statements in a questioning way that prompted further exploration and discovery. I did not interact with Lahu people enough to evaluate how they would be. The Lahu I met were quite familiar with foreigners and I feel there was little they could ask me due to translation barriers that they could not find out from others they knew better or had interacted with for longer. Jayo certainly indicated in his videos that he wants to share and learn.

5.4.2 Learning for oral cultures

Oral learning for indigenous people can be strengthened by altering curricula and delivery methods. Here adult education can be most effective through learning centers, adapting

buildings that already exist like schools, churches and temples to serve these needs in the communities where they are located. This requires planning decisions and a positive relationship with the authorities, the local villagers and these large organizations. Can it be done in a democratic way? Well it can, but this is a political question rather than a financial or cultural one. CMU's FORRU model may work to some extent, but my experience of it, was that it was directed only at forest restoration, with adroit funding via grants from NGOs, and as a sustainable scalable model across all villages this is questionable.

Community development aspects would need to be built into something like the FORRU-CMU, and a desire to make its underpinnings not only based on service funding, but also some revenue generation. This is an Anglo-Saxon economic perspective that the welfare state fails when it is paying people to be dependents rather than paying them to do a task. Community payment does not have to be money. Time-banking is an alternative basis to cash-money and can work as one form of community currency to make long-term viability. However, the ecosystem service of forest restoration cannot be the end point, at some point the forest is restored, and management and usufruct from that resource needs to be considered. Learning about that by the user community can be supported by a learning center, library or some kind of community structure. This was perhaps behind the thinking of the Lazy Man School, the Daveyo Bamboo School and the idea that Emäntä Parantaja had for a place to be constructed on her land. It was also behind the library that Puckmai ran as a business. Collectively these can be called strong centres and could be described with a Pattern Language.

Agricultural subsidies are another way this can be done, though they are not so favored by many as the EU did with its support for set-aside and Single Farm Payment schemes that have developed for keeping land management and rural areas viable. Creating such a bureaucratic monster in Thailand has precedence and it has been a failure with a disastrous rice subsidy scheme and so may not be thinkable in terms of the Overton Window at present. Rising food costs and then moving the money down the chain to the communities producing the food may offer a way to fund them, which seems to be the concept behind The New Theory. Yet for indigenous cultures the implementation is instead of strengthening their resilience and autonomy, locking them into a market system which is poisoning their water courses, facilitating forest destruction and peasantizing them with its concomitant rural to urban migration.

Anyway, whichever funding mechanism supports the resources of time or money to make community-based education viable must decide what is supported. As well as support centers, which are strong centers for the community, pedagogy is needed, and for oral cultures, there are techniques that can be adapted by use of modern technology to function with oral cultures and oral-based learning. Writing can have a place at the learning table too. Questions of language policy relate to writing. How much can people use their own language in their daily lives and how much will they have to learn Thai or English? What writing system is to be favored where there is not one agreed standard between different ethnic groups or even within an ethnos. Thailand, as a nation state, has not really considered these questions and most indigenous people have taken a pragmatic approach to using what is there writing wise. There have not been very vociferous demands for translation of signs and materials. Unlike in Corsica or Wales where signs are defaced and destroyed if the indigenous languages are not respected Thai signs are not complemented by the regional or local spoken language being written on them.

As language contains so much cosmology and possible positive interactions, then this is a failure, which puts Northern Thailand at a security risk. There is a weakening of resilience to

shocks to the system such as caused by environmental degradation. There is a danger, the wiser courses of action and learning situations that the Karen people today, may have in relationship to the forest resources around them, are lost and weakened as newer generations lose their ability to communicate in the cultural language that has been so beneficial. Without writing, the old wisdom will be inaccessible to many, and a change to reading Thai history rather than Karen history will weaken that even more. The same effects can be seen when looking at the formerly mountain forested areas of Mesopotamia, as Arabic culture has overwhelmed and moved away from the once serene natural vegetative aspects of Gilgamesh's time.

5.4.3 The use of modern technology in learning

Aside from the cultural aspect, devices such as mobile phones and laptops are useful for students if the student uses them for learning assistance in context. Many people struggle with new words and new concepts – being able to check them out or even see a short video demonstrating a technique in a learning forum is very useful. For NRM this kind of microlearning has not been very prevalent. In the future, it can be used much more. For example, constructing a building, or evaluating an area for burning or evaluating an area for its reforestation success can use these devices to a greater extent.

There is specially tailored content being created for this very purpose called microlearning. "*EduTech has to adjust to people, not the other way round. MicroLearning offers an answer. Break down content into small units – and use time flexibly, in short activities*" (Bruck, 2016). One Austrian company is doing that for health related learning and claim,"*»Integrated MicroLearning« is a didactical concept developed by the Research Studio Austria FG to make learning easier, use the frequent changing of activities and employ MicroContent as a foundation for knowledge building and management*" (Bruck, 2016).

Such an approach could work for NRM and indigenous people, with the fragmented nature of microlearning the files in the RSS format, which number in the millions could be curated for suitable content (Bauwens, 2006). This might be user led or even by a group of users acting as a peer network to create and use content.

Theoretically, indigenous people can use contemporary communication devices as tools to aid in learning in their cultural context. However, there were riots in Peru when money was allocated for computer infrastructure, and the low literacy famers did not see them as useful (Haines, 2005). Yet in the UK farmers despair at the slow internet they must tolerate due to the lack of broadband. So where is Thailand in this spectrum? Just-in-time ordering or checking the price of produce can benefit indigenous growers in Thailand too. Thailand has widespread usage of mobile phones and this is where communications and useful, appropriate technology is being and will be developed.

As for learning, there is an element that is operating and an element that is learning in their daily praxis. If they are running, a tourism related business, perhaps with guides in the forest, then as co-learners with the tourists then access to accurate information is wanted. If Hmong Forest Walks are happening it maybe that some fact is not easy to get or recall. Perhaps some additional piece of information can be learned and applied. If someone is cutting trees and wants to then plant lychees, learning the options for planting that area can be good. These are largely information needs and supporting collective of learning could be useful.

To play the futurist, we could imagine time and motion studies looking at harvesting or planting and matching this with time and movement studies, production levels and techniques or

equipment employed. An interpretation of these allows a learning about the best way to accomplish the task.

To facilitate these aspects then Thailand has to develop an information technology strategy and apply it. So far, such strategies do not seem to be present in most countries. There is a need that was identified by one of my respondents for use of multimedia to reach people in indigenous communities. This need is not at present being addressed, and demand for it is low. It maybe that cultural pressure will do it anyway, but it and the use of more things can be mediated in theory by the Thai state. By looking at the UK desire for computers in schools in the 1980s (Blyth, 2012), *One Laptop per Child* (OLPC) program (Warschauer and Ames, 2010), and others, we can see there are useful things that can be learnt for technology rollout in societies including in Thailand. In Thailand the policy aim is already a tablet for every child (Van De Bogart, 2015).

Structures and support for adult learning are important too. A forester might like to use, drones, apps, a traditional tool or technique such as Karen reforesting or Hmong Forest Walks, but they need support to do that. Technology here can include manuals, recording experts in the technique and the experts aiding as tutors for those learning the technique. All these support structures are traditionally there in the village if people are living in the village and working there.

However, as people are more mobile, education is more fractured, life-long and varied the connection with these experts weakens. Structures that connect with a community of practice need to be supported. A variety of different approaches and techniques should be combined for efficacy. This might be through learning centers, online repositories or communities of interest with a platform such as a wiki space or virtual media environment where they can associate.

Uptill now these spaces are used little by indigenous people as the piled up dusty computers I saw in Ban Mae Sa Mai sadly reveal, but the development of augmented reality means that soon these spaces can and will be developed by and for indigenous people. Modern CIT, such as mobile phones must be built on as a platform, to provide a space for meaningful co-learning approaches.

We have moved away from the old pedagogical models, of teachers only teach and learners only learn, to one where learning is a life-long, intergenerational, intercultural interaction between co-learners. For NRM learning to be effective, we must facilitate multivariate co-learning. We need to think of horizontal and not only vertical learning as part of our repertoire of modern learning technology. Resources are needed to do that, some of which can be termed global learning resources.

5.4.4 Global learning resources

The biggest resource is people. The wisdom and knowledge that is in people and their ways of being is enormous. This is only partially accessible. Projects such as the Human Library (Abergel, 2016) or the Japanese recognition of certain artisans as Living National Treasures, which UNESCO would like to see as a "*'Living Human Treasures' system worldwide*" (Aikawa-Faure, 2014), are ways that some people, and the knowledge, know-how and wisdom can be better known and learnt from. With the recognition of people, as containing embodied knowledge, is needed a relational capital concept to facilitate the knowledge flow and access. Some of the indigenous people I met were already accessing resources from Japan, a Karen man had been there directly. Now it would be possible for him to go there vicariously. There

were foreigners coming to Doi Mot to take part in global service learning. They could have that experience and share with the indigenous people without the level of expense and travel needed to date.

There are varied ways to record and transmit information. *TED Talks* and *TEDx* events (English acronym *TED* stands for *Technology, Entertainment, Design*)[10] are one way to do this (Donovan, 2013) when as expert knowledge embodied within individuals. There is an element of being in the moment, which can be

Figure 5-1: Jon Jandai at TEDx DoiSuthep. Source: https://www.youtube.com/watch?v=LovmKLQcQw4 Copyright: 2011 TED Conferences, LLC (CC BY -- NC -- ND 4.0 International), Chris Smith and Jon Jandai.

experienced only by being present. With editing, a recorded version of a talk can later provide much of the experience vicariously Stills from these type of events are shown in Figure 5-1 and Figure 5-2. I saw a TEDx talk in Chiang Mai and such talks are archived if only indigenous people can access and understand them.

Figure 5-2: Roy Bunker, Learning from a barefoot movement at TED talk, Edinburgh. Source: http://www.ted.com/talks/bunker_roy Copyright: 2011 TED Conferences, LLC (CC BY -- NC -- ND 4.0 International).

[10] TED talks and TEDx, which are extra and locally organized events with the TED branding, are part of a range of public information presentation by TED a non-profit organization.

There are other platforms, such as YouTube and Vimeo, which allow content sharing. However, curation and sustainability over time are issues with many of them. The skills of a librarian, are valuable in keeping and curating content, and can be more widely disseminated (Borgman, 2014) by peer-to-peer learning or popular education (Kantasalmi, 2001). These skills can and should be passed onto indigenous people, so that the keepers of wisdom are able to use appropriate technology to do that in a way that is accessible in the future. I think that microlearning is the likely way this will happen with ubiquitous learning when the technology available. However, the widespread presence of IT support people and fora online highlight that the quality and depth of learning can be deepened by planned interventions such as the Get Online Days that take place (Petz, 2010).

The Queen Sirikit Botanic Gardens works as a kind of central library-cum-museum for community knowledge. However, such knowledge-sharing institutions must learn from the museum in the community approach too. Here the museum is not only a source of learning, and a repository for nostalgic objects, but also much more, and plays a different rôle in the community. This is a "*functional heritage* [where] *the conceptual focus of cultural heritage has shifted alongside three interrelated and complementary directions: 1) from monuments to people; 2) from objects to functions; and thus 3) from preservation per se to purposeful preservation, sustainable use, and development*" (Loulanski, 2006). Australia has seen some very successful examples of this approach. There museum trends are for museum patrons not to make physical visits to museums. Rather patrons "*respond and contribute meaningfully to conversations about exhibitions and programming occurring in the physical space*" via emerging media tools to such an extent that "*according to the Council of Australasian Museum Directors, 70% of the 51 million visits in the 2013-14 financial year were online*" (Johnson et al., 2015).

A peer-to-peer network, with connections that strengthen the network and work on a small community model is a way those botanical gardens can reach more villages. Large communities are disaggregated to smaller units, which create a network effect. There is no hinterland and center as Weber envisioned (Weber, 1923), but instead the network itself contains an emergent property. There is much discussion of this and how it could work through the idea of distributed computing and the Peer to Peer Foundation, which was based in Chiang Mai when I was there has investigated the viability in different application cases. I did see this in affect when it came to mobile phone use and using phones for worshiping by the 7th Day Adventists.

Indigenous resources; such as the plant names and uses the Emäntä Parantaja carries with her, or the spirit mapping which relies on Hmong kevcai practice, could then be applied in new contexts. WFPs could be surveyed and their usage developed, by social entrepreneurs, for biodiversity monitoring and ecosystem services, uses that they may not have had applied to them before. Spirit-mapping, could be used to show where human and natural interactions can work in a location.

Thus, global resources are already within the people, the institutional and the technological domains. They can be made available for all, not just the indigenous people, to benefit from, but need support to do this. This culture is not completely here yet, but we can see elements of where it is manifesting as the Karen elder Joni Odochaw would like (Lindner, 2014). I think it is likely to develop where we have the presence of the liminal, and Northern Thailand as a part of Zomia is a good location to look for this liminal.

5.5 Critical appraisal of the methods employed for this research

The proof of the pudding is in the eating and the proof of a method is in the meeting of the research objective the method was selected for. Useful additional information may arise from application of methods in combination with each other, so that the methods can be said to have an additional bonus aspect or beneficial emergent property. This collective effect is why I term the methods as artistic research methods (ARM) rather than just talk about a number of methods of artistic research.

From an objective point of view, there are aspects to the methods that can be assessed and these characteristics can then be decided upon as suitable or not suitable by an individual investigator. Thus fitness for purpose rather than intrinsically good or bad is the appropriate criterion. In the following, I reflect on this, if fit for purpose for this particular research, objective by objective.

Objective 1: Discover how learning occurred around NRM amongst indigenous peoples in Thailand.

This was partially met as informal and non-formal learning was explored re indigenous peoples in Thailand. The field trip and co-performative witnessing were effective in meeting and encountering a range of experiences. Where it was inadequate was in learning about formal learning with the Royal Forestry Department, University sector and Vocational schools. Some documentary research into videos did find some more elements than just attending some locations (but not all) and the formal education might have been met by a longer period in Thailand. Probably an enrollment in a college would have revealed formal educational aspects better. New knowledge was found, which otherwise would not have been.

Objective 2: To see the broad setting as regards the physical environment (so the material culture of landscape).

This was met by travelling in Thailand and documented by photography and observation. Some aspects such as knowledge of the spirit tree could most easily have come from the informal conversations held around focused research methods. That is deep hanging out proved more useful than the semi-structured interviews. The range of topics that arose in conversation, close to the locations concerned, when led by FORRU-CMU staff was more wide-ranging and informative than interviews. The interviews, by focusing on certain topics, framed and excluded other information of interest.

Objective 3: Seeking out the intangible cultural heritage and praxis as to how people learn.

Co-performative witnessing and artistic research methods gave some knowledge here. The short-term nature of the field trip prevented the depth that would have come from a longer use of the methods. Opportunities to stay with Karen, Lahu and Hmong people and explore this more were available, but there was too little time to take more than a brief advantage of them during this research project.

Objective 4: Taking those things I found so that heuristics and pattern languages could be developed from them that people could use in other times and places.

To some extent, this is a data processing method. It has proven effective in identifying some patterns to use a pattern language approach, but the methods need more time and a better framework to comprehensively transfer knowledge coded into pattern languages to others. The attempts to use a wiki or social media in transferring know-how have not been effective to date. The delay has come due to the time and technological requirements, which are costly in terms of money, training and knowledge. It has not been possible to easily transfer the information learnt to others. Partially this is the nature of only having one investigator and partially it is the nature of structured knowledge, which is not so applicable as microlearning and microcontent for rapid dissemination.

The action research element has happened though by the creation of The Proclamation on Rural Resilience (Appx. VIII), the writing of Man and His Relationship to the Nature (forthcoming) and the support for Jeff's Journalism, or to other people which manifests not through written representation, but by spreading of memes in material culture. Earth building a wall in Doi Mot village replicates the pattern in physical terms and others later can come and learn that way as a demonstration farm acts to extend agricultural practices in a community of farmers.

Objective 5: Seeing if there is peer-to-peer learning in the communities studied.

This was not found to a great depth. Perhaps the methods were adequate for looking; just the peer-to-peer learning was absent. The methods did encounter examples and it would have been possible to find out more in depth about that learning by playing computer games or going fishing with the fishing group. The knowledge of these both happened due to deep hanging out.

Objective 6: Exploring individual learning in myself.

I have explored individual learning in myself and the methods partially helped with that. However, they have more been useful in helping me learn than gain an understanding of how to learn, or how my thought processes work. More effective has been the writing up phase, the journaling and reading through the literature. Here the thought processes of explaining what others have passed on through their praxis and wisdom has been more effective. For exploring self-learning better would be just to read and not to go on field trips to "*Amazing Thailand*"[11].

However, we should think about collective learning. My community of practitioners of artistic research methods (ARM) have benefited from the research in a way that would not have happened without an expedition to Thailand. Practice and defining what we do has been prompted by the research in that wider community. This has extended to the indigenous people, those working with them and those that are not connected with Thailand directly. Here the approach of using ARM has meant the wisdom of the approach, awareness of what we do as artists, scientists and researchers has been successfully spread further, and praxis has improved. The concept of ARM has developed due to the application of ARM!

[11] *Amazing Thailand* was the name of a *Tourism Authority of Thailand* marketing slogan. See Kontogeorgopoulos, N., 1999. Sustainable Tourism or Sustainable Development? Financial Crisis, Ecotourism, and the 'Amazing Thailand' Campaign. Current Issues in Tourism 2, 316-332.

5.6 Reflections on this style of research

Thinking and judging, which are important for carrying out research, are significantly affected by different personality types (Ahmed et al., 2010). Research is also dependent on the framing, which a researcher has from their socialization and explicit educational history. The scientific approaches have tended to socialize students into learning *the right way* to do something. My father pointed out that while he was teaching art some children would make drawings and ask him "Is it right?" (Petz 2010, pers. comm., #13). he pointed out this was an impossible question for him to answer and a nonsense, as right was what you wanted it to be, a constructed reality and not an objective one.

Given that much of nature is a spectrum, picking a spot in the spectrum when looking at a phenomenon and ignoring the variety around it is not right. A similar forlorn quest for the one right answer is reported for forestry students in field-based forestry exams (Schume 2017, pers. comm., #25). The ARM research style has breadth and so many possible right answers can arise. It is good for opening up, rather than restricting possibilities.

ARM reveals varied ways how something may be done, and so samples a wider range of reality. Thus, fit for purpose is a better way of looking, and when there is no defined purpose merely the act of doing is right. In the ARM praxis of this thesis, I followed the Manifesto of Ethical Applied Development Research Principles (Appx. VII). Manifestos are a common framing tool in arts-based practice (Haseman, 2006), though in this case it was heavily influenced by The Core Peer 2 Peer Collaboration Principles (P2P Foundation Contributors and Bauwens, 2013), the principles for ethical educational research (McWilliams, 2010) and the Internet Research Ethics (Buchanan and Zimmer, 2016).

Others who read this might wonder what my assessment of the methods is. How much of what I found out was due to the methods, the investigator or serendipity? How reliable would researchers find the methods if they were to try to apply them? Would they work as well as they did for me?

Assessing the methods in this way is not an easy task. It is complicated by a complex social system of the researcher as part of both, research and activist communities, which give different perspectives on the finding out. The findings can be judged by their use to the wider community of practitioners and so may be novel for that community of users, yet may not be novel to the academic community of researchers. This apparent paradox is reconciled within the paradigm of action-based research, where the novelty of findings is evaluated on their instrumental aspects. This is akin to innovation, which may be territorially restricted, thus innovative at a global scale or only locally. Or innovation which may operate within a restricted sphere of society (Moulaert et al., 2005).

The application of tacit knowledge, which is not core to the methods but are crucial to them make assessing the methods separate from the investigator impossible. So from a personal subjective perspective the methods were good for me as they found out what I think is useful. In all categories of my taxonomy, around learning, I found what I hoped to find. That is a living tradition of learning, valuation, and usage of knowledge. Therefore, the research community can be satisfied with this. The evaluation of the action-based aspects should consider the products of the research like pattern languages for wider use, creation of new interactions, and

community functioning. Here the judgement from my side is that there were significant findings in the research, but their impact cannot yet be evaluated.

I have observed that ARM facilitates collaborative action-based approaches. Co-learning takes place. There is collective learning and communal wisdom generated. Critical points to consider when applying Artistic Research Methods, based on the experiences gained in the course of research for this thesis follow.

The *principal investigator* needs to be self-reliant as there will be intensive periods in the field in culturally unfamiliar locations where there will be total emersion. They must be a confident and outgoing person to gain interactions in the society visited. Good communication skills are required. As societies can vary, there needs to be some personality adaptation to the rôle, as with any group of people (Belbin, 2012), to the societies.

The researcher needs to have community experience and some knowledge of arts and sciences in order to see possibilities. So it suits A people with more than one area of expertise, rather than T people with a single area of expertise (Madhavan and Grover, 1998). The method is reliant on having a variety of experiences either vicariously or in person, for example when comparing forest walks in Thailand with Northern Europe, this can only happen if the person has been on forest walks or knows them in Northern Europe. However, this can be accomplished by guided psychogeographic walks using Google Earth or another virtual environment (Kvas, 2014) as I have done elsewhere. This makes the research very culturally dependent. It needs to be applied in a domain the investigator is familiar with and can critically engage upon.

The *structure* of the research boundaries, procedure and plan require a high level of adaptability and dynamism, thus intelligence that comes from being flexible with the method and how it is applied. This comes from the openness of the Artistic Research Methods. However, this means that explaining and using the method needs a clear idea in the researcher's mind as to what they want to find out. There can be a tendency for ARM to lead to diverse directions and for those interacted with not to be clear what is wanted. Projection can happen both ways. This is perhaps a feature of exploratory research in general; however, the domain dependency can be helpful here in identifying boundaries.

Due to the adaptability required it is important to be aware of design aspects and ergonomics. The ability to look from an integral cultural perspective helps to design new aspects and see how the research fits with what activities are going on. The societal aims of those researched with can be ethically respected whilst meeting the research objectives by such a wide perspective. This does not mean a lot of structure is needed, but just a survey method can be structured, semi-structured and open when applied to interviewing so the flexibility of openness and the open end of the spectrum is appropriate here. It is appropriate as a way to deal with uncertainty and inclusiveness and thus this research is particularly apposite for wicked problems, which contains uncertainty and mutability in their manifestation (Farrell and Hooker, 2013).

As far as *equipment* is concerned, there is a low cost to the methods. A camera, phone, laptop and low cost software, pen and paper are the main pieces of equipment required. As these

require electricity or good batteries this can be a limitation where these are not reliably available.

Costs, money wise are quite cheap, but would be more expensive if full commercial rates were paid and expensive accommodation was demanded. As home stay was possible, and ideal with ARM, accommodation costs can be reduced compared with hotel costs, but are still present. There is a cost to those researched with, and this can be more fairly shared by home stay being properly compensated for. Food was self-catered for, but if purchased would have been more expensive.

With regard to *time resources* compared with typical ethnographic approaches within anthropology, where a year for research is standard, three months is much less time for this method. However, the same depth of knowledge was not reached within such a short time. Six months is much closer to a typical art residency. It is a better length of time for ARM. ARM is dependent on what is happening in the culture. For example carrying out three months' research during peak harvest time would be less fruitful than when I went to Thailand when it was neither a busy planting nor harvest time. This time-frame becomes realistic for short research projects undertaken by students.

In terms of *staff demands,* the method worked when carried out by a single, physically fit, adult male. In some societies, there could be issues with this dynamic. It can be that there is a relationship aspect where working away from a family is not so desirable. Minimal staff support was required, but ideally, a support person should be available and best practice applied from the Social Research Association Code of Practice for the Safety of Social Researchers (SRA, 2006).

There is a risk of stress during certain moments of the research and these can require assistance from others. In this research, there was a sending institution (BOKU), hosting institution (CMU), research council (National Research Council of Thailand) and people in several NGOs who could give support. This was needed when accommodation failed for example, or assistance was needed with permission to research or help gaining access to contacts. These could be quite demanding of staff support.

The amount of *bureaucracy* and paperwork needed for carrying out ARM is minimal. At times props and crib sheets are needed. Unlike participatory rural appraisal or some community development methods a large amount of paperwork, flip charts and printouts are not needed. There is minimal set up time. Permits and insurance are a good idea and as with any social research hand out cards with info about the research and research team.

A large amount of data is created, which implies processing time, and this can take some time to process. The use of software can help with this. Prior to engaging in the research having a structure for how the data will be recorded and processed it useful. As the data may by very personal data, objects and interactions, it is sensitive. A data management and security plan is needed. Time needs to be arranged for journaling and support with this can be useful.

There is a danger of *emotional involvement* with ARM, thus creating self-fulfilling research data via leading questions. For example by saying what you want to find others may create or

mislead to be helpful. This is a greater danger than other methods where there is a clearer emotional distance between the researcher and the researchee.

A researcher applying artistic research methods is much more a part of the research and this creates a dilemma between being detached from it, and becoming emotionally involved with it. This dependency, which makes letting go difficult, is a psychological characteristic, which not every personality type may be equally susceptible to.

This style of research can be stressful and so awareness of your attachment style, and particularly having one that is a *secure attachment style* (Hawkins et al., 2007) is good to know before close engagement with the people you research with happens. In this case, emotional attachment is accentuated and has to be accounted for much more explicitly, not only for personal, but also for quality control reasons. It should consider others who can become co-dependent and not autonomous or fail to self-actualize.

With regard to the *openness of research* the approach and the methods work best from a citizen science perspective, where the researched upon have the same aims and values as the researcher. A willingness to share the findings on the same basis is a good thing, generally, but in here, explicit attention needs to be paid to informed consent and ethics. Awareness of protecting communities, individuals and environments needs to be considered.

Finally, when it comes to the question of *community impact* the chosen approach is good at building communities and connections between researchers and non-researchers. It appears good at global service learning, good at strengthening social economy and good at preventing damaging commercial exploitation of the findings.

6 Summary

Can anything be concluded from this work? Does it make sense to conclude what is an ongoing process, and only the beginnings of research? A conclusion can be given in a dynamic rapidly changing situation, as found in Thailand, but its usefulness must be questioned. Nevertheless, indigenous people in Northern Thailand are living existences with practical wisdom for us to learn and can help us apply learning theory.

Indigenous in Northern Thailand can benefit from application of the technology we have to enhance their techniques. A dualistic view is perhaps not the best to take, rather the Lahu view of a dyad between indigenous and non-indigenous societies give us a better way to see how we might reflect upon ourselves and develop mutually into the future for good NRM.

We can learn how we might learn and live and share so that all of humanity benefits. Thailand is at a change point. However, pattern research shows us that there are pedagogical, social, and built environment patterns that we can learn and apply.

Learning research is often focused on children and young people. Finding life-long learning in a rural context is increasingly common, though less so than schooling or vocational education, which is often subsumed under the term adult education (Titmus, 1989). Undertaking an assessment of that learning in terms of the venue, fora, techniques and learning sources is a very

wide-ranging endeavor. The specific application to NRM and for indigenous people as far as I am aware was covered from the perspective of education. Yet education does not cover all of learning. Given the breadth, all these aspects touch, we can draw only some limited conclusions to apply what is here at other times and places.

This is expected from this study as the exploratory research approach is generally only indicative where more defined research questions may be posed and hypotheses developed. Thus conclusions can only be tentative and of limited generalizability. However, the conclusions can be more specific to a certain group or individual learning community and so they do have merit. This specific focus reveals a serious methodological weakness with much research that is done on a case study of an individual community, where replication adds no more value. So many questionnaires or interviews do not bring better information nor validate what is collected as they sample too few people and too little of the variation that exists across a knowledge landscape. In the case of this research, I was conscious of this when I tried to find variety with different ethnic groups and locations, but sacrificed something of the depth that would have been found if I had been more limiting in these variables.

Despite these caveats, I did find useful things, which I could analyze and draw some conclusions that are more widely applicable. Learning requires a venue that is designed with integration as a strong center to be effective. It is best done by considering the pattern aspects of a learning building. That venue needs to have learners that are embedded in a culture that is supportive of what they do.

Good support can come from the family, the village and outside agencies. Ethnic traditions can be useful in developing a person and that development includes learning to function in a natural environment, but they are not enough to deal with negative outside powerful influences.

Support structures are required to connect and mediate effective community development and learning for that development. Individual and collective learning; micro, meso and macro learning; the cognitive process dimension and the knowledge dimension must all be considered for planning for learning in indigenous mountain forest communities.

6.1 Major findings of this research

While there are results which add to the knowledge of what exists around learning, some results have a direct practical use now. These are given here in brief and why I think they are significant. This is of course my selective view of the research being purposeful.

Hmong garden in the forest (cf. 4.1.6) seem important as they gives a way that people and forest management can interact in a sustainable way. The dynamic of nature protection, excluding people who live in an area, is not a wise one where there is great pressure from a local population to use those resources. It makes an expensive policing requirement, instead of a supportive rôle incumbent on the forest administration. There is a difficulty, in restoring degraded and deforested areas of Thailand and other places. Yet the forest garden brings with it; an intimate knowledge of what is growing, and mechanisms for encouraging useful plant biodiversity.

The Hmong garden in the forest is readily transferable to other locations by using local people who are educated about the plants and plant interactions with each other and the community of users. While it comes from one ethnic group, the Hmong, I believe it could be repurposed for any kind of woods and ethnic group if sufficient knowledge were available, much in the way

that the Adopt a Monument scheme has done for different cultures and histories around the historical landscape.

The *Hmong forest walk* (cf. 4.3.4) is the forum where I encountered the Hmong garden in the forest. Here is a way that following a known trail by an expert connected to the place can make what is there practical and useful. It is a way to keep foraging and herbology traditions alive. As a practical location for doing that, many similar trails and walks happened in other cultures so it seems that the pattern is readily transferable to different settings and groups. The distinctive aspects of being expert led, themed and embedded in a culture allowed both embedded and embodied knowledge to be transferred. This learning aspect makes it more valuable than a trail with signs that do not connect with specific plants at specific locations.

Rather like psychogeographic walks it is immediate in the here and now and makes use of a wide range of different learning styles. It is prescient to some extent with regular walks over the wheel of the year allowing ecological dynamics to be absorbed, which is useful for food, medicine and general health and planning. It would allow an area that is being restored or even a virgin forest to be monitored by amateur naturalists. This citizen science is useful for spotting climate change signs or other things of alarm in threatening local biodiversity. It could be easily linked in with new media applications such as blogging, photojournalism and these aggregated for big data analyses. On an individual level, such curation and linkages can really grow knowledge and share it more widely between participants of such walks, such as through foraging and herbology networks.

The *Hmong herbology garden* (cf. 4.1.6) is a novel form of garden design, which I think can be adopted in other places. This is mostly of value as an aesthetic choice, but the practical aspect could provide a counter argument to modern civilization being the only answer for medicinal treatments. Traditionally we have kept herbal gardens, but often the ornamental or food aspects without the physic one are considered.

There has been considerable debate over golden rice and its supposed health benefits. Opponents have pointed out that for good nutritional health home gardens, growing a variety of vegetables are better for achieving a balanced diet rather than the magic bullet of the rice, which appears to entrench an over dependence on one food source. So it is with the Hmong herbology garden, which can provide in all communities, not just vulnerable, liminal or indigenous ones, a home apothecary.

Along with the growing of the plants come the herb lore and a care for health and nutrition. There is a large amount of malnutrition, in the world, which is due to ignorance over the food we consume. We consume meals around 5 times a day in many cultures, for example the West, yet many people leave formal schooling of over 10 years unable to make a balanced meal or cook tasty, nutritious food for a group of people. A reconnection via the Hmong herbology garden could help to heal that discontinuity.

The *Lazy Man School* (cf. 4.3.2) has many features found in other pedagogies, and popular education. It is important, as a practical way of carrying out horizontal education. This wider remit takes a co-learning paradigm, where learning is practical, personally- and community relevant and captures all the important features of good learning practice. The approach can extend to other settings and work inter-generationally, inter-ethnically, which it does already, with learners at different levels and experiences.

The pacing, autodidactic aspect and flexibility allow repurposing and redirecting as needed. Although I think these are great things and a pedagogical pattern could be made about the Lazy Man School, the praxis was weak in some respects. The lack of written curricula makes assessment and validation hard (Bjornavold et al., 2015). Portability of learning and qualifications can be a useful thing and here the informal and non-formal learning has not yet found its way to be accredited and demonstrated to others.

However, just as language-speaking competence can develop without writing, and later language testing can certificate what has been learnt so too can other learning. In many ways what is being learnt are life-skills or rural crafts for a life in that existence and so external validation is not needed; validation is provided by getting a house to live in that does not fall down, or feeding yourself, and that the land or forest are not depleted.

Pattern language research findings, are dependent on accepting pattern languages (cf. 3.2) are a useful addition to our way of understanding the world. If that is so then I think that that the *Pattern Language for a learning building for natural resource management* (cf. Appx. V) is a useful find. A dedicated building that seems to epitomize the pattern language, from an ethnic perspective, was a major find. I suspect that such a building will be quite rare and protecting or at least recording it is important. That this learning building is functioning means that social patterns and pedagogical patterns can be found around it. More research around this functioning would be useful.

The Daveyo Bamboo School has certain features and individuals that to my mind make it function in a way that contains a dynamism that gyroscopically stabilizes the unstable. It is unstable as it lacks formalized rigid systems, the Lahu people culturally predisposed to voluntarily cooperate and be told what to do, the ideas are flexible and in a state of flux. Yet it functions. Capturing this mutability is hard, but recognizing it is there is a first step, which more research can explore and then apply to other locations and contexts.

Practical tools for pattern language research were created during my writing-up phase. These include *a methodology for writing a pattern language*, which can be seen in Appx. III; *a pattern language template*, in Appx. IV; and *a property matching sheet template*, in Appx. II. While my exploration focused on learning buildings, these tools can be used for others in the wide range of pattern applications. I consider these as valuable contributions to the literature, even if others develop better or different tools. That few people have made or explored or even developed these kind of guides are big limitations on spreading the ideas of patterns.

The pattern tools being developed are mainly focused on applications for computer related purposes, principally software, although some hardware architecture design exists. To make pattern research relevant and accessible to a wider audience this kind of development is needed in other areas like natural resource management, food technology, or social patterns. Similar limitations exist for peer-to-peer or sharing economy approaches. My tools are offered as a contribution to making the more desirable purposes, which enrich our lives and reduce ecological or financial costs, more possible.

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Appendix I: Christopher Alexander's fifteen properties

The descriptions below explain the properties of pattern languages revealed by Alexander (2002). They are modified from CES, (2006); Williams, (2014); Iba and Sakai, (2015).

1) Levels of Scale: There are different scales visible within an area, which are such that they do not make big jumps between sizes. This is seen ideally with centers being approximately half the size or two times the size of the next center. The building should not be so big that it overwhelms in size difference the natural environment it is complementing. If there is a well-ordered range of sizes, a field effect is formed, and then, a whole is made by tying the centers together. They seem coherent due to the proportional relationship between them.

2) Strong Centers: A living whole contains strong centers within it. The concept of a strong center is applied recursively; every strong center is made up from multiple smaller strong centers. Nevertheless, there is often a principal strong center in a whole. The strong center has a field effect generated by nesting.

3) Boundaries: A strong center is surrounded by smaller areas which forms a field-like effect which intensifies that bounded strong center. The boundaries also bind the strong center to the area beyond, embedding it in place. The proportional size of the boundary and the strong center should be of the same order of magnitude.

4) Alternating Repetition: Alternating repetition is not just simple repetition because the repeating elements are modified according to their positions in a whole. When this property is applied recursively to all entities, spaces between the entities, and the process of repetition, beautiful harmony is created. Fractals commonly display this alternating repetition at different scales. The pattern of repeating centers forms the field effect, and as a result, wholeness emerges. Centers are intensified when they repeat with subtle variation.

5) Positive Space: The perception is of distinct objects, within a matrix. The objects dominate the view with the matrix more subdued. The matrix enhances rather than draws away from that perspective. The objects are strong centers and occupy what is called positive space and are said to have a positive shape. The matrix forms negative space and there is too little of it to have any left over from an adjacent shape enhancement or directly from an adjacent object to destroy this perspective.

6) Good Shape: Shape is a misnomer, what is meant is a good form. Form is seen in three dimensions with the surfaces, edges and relief influencing a living wholeness. A good form can be broken down into simpler forms or shapes if complex. These and the main form itself, have a high degree of internal symmetry, a clear center and overall bilateral symmetry. This makes the form coherent. This coherence gives a feeling of completeness, profundity and realization.

7) Local Symmetries: A living whole contains various symmetrical segments that interlock and overlap with each other. This feature of symmetry is called local symmetry to distinguish from overall symmetry. If there is a balanced distribution of equivalent forms or spaces about a common line or point in only a part of the building it has local symmetry. However, this local symmetry forms a strong center and when juxtaposed with another strong center, which has its own local symmetry, can be seen to locally have symmetry rather than any overall building or plot symmetry which may or may not exist. This can occur at any scale and so each local symmetrical segment consists and thereby generates smaller centers and creates a coherence of the centers. If only overall symmetry is present in an object it tends to look mechanical and lifeless, usually due to the fact that local symmetries are absent within the overall form. However, when there are local symmetries, centers tend to form and strengthen the whole.

8) Deep Interlock and Ambiguity: A living whole has some forms that interlock centers with its surroundings. Centers also interlock with each other. This creates an emergent property from the two centers. Thus, there is an ambiguous aspect as to whether that emergent center belongs to one or other or even itself.

9) Contrast: A center is intensified by the sharp distinction between the character of the center and surrounding centers. For example, the forms of contrast are black/white, dark/light, empty/full, solid/void, and busy/silent. The difference between opposites not only separates things, but also brings them together. The contrast also accentuates the features in common within a center.

10) Gradients: Qualities vary gradually, not suddenly, across space in a living whole. A graded series of different-sized centers forms new centers that have a field effect as a whole. These gradients are caused by responding to the natural variation of the circumstance.

11) Roughness: Living wholes have some local irregularities within them. Roughness is the odd shape, the quick brushstroke, the irregular column size or spacing, the change in pattern at the corner—it is adjusting to conditions as they present themselves with meaning. The irregularities are caused by adapting to irregularities in the environment and responding to the demands and constraints from other nearby centers, not by arbitrary decisions in the design. In that sense, roughness is a form of perfection.

12) Echoes: A living whole contains deep underlying similarities within it. These similarities do not exist merely at a superficial level, but they exist in a deeper level of the structure, derived from similarities in the process of creating them. The similarities of elements attach them together to form a unity.

13) The Void: Centers are intensified by the existence of an empty center. This emptiness needs to exist in the field to preserve the balance between calmness and emptiness.

14) Simplicity and Inner Calm: A living whole has certain slowness, majesty, and quietness, i.e., a state of inner calm. This quality derives from inner simplicity, where everything that is unnecessary is removed. It does not refer to simplicity in the superficial sense but refers

to the true simplicity of the heart. N.B I struggle with this property, it seems to refer to a minimalist aesthetic and one that is decluttered, yet it does not seem to offer anything that is not already covered with other properties. I wonder if it is also a subjective cultural aspect.

15) Not-Separateness: In a living whole, any centers deeply connect and melt into their surroundings, not separate from them. They are merged inseparably, but they still have their character and personality. To achieve this connectedness, the boundary between the centers and their surroundings are fragmented or graduated. As a result of this deep coherence, things feel completely at peace.

(16) Mutability: Mutability means prone to change, and in this case will happen and can be seen over time. This is akin to deep time weathering a landscape without destroying the wholeness in that landscape. It can be seen for example by a hedge growing seasonally over the wheel of the year, or a building altering its usage and function over very short-times such as during a day. This change is a property we can only see over time, yet we must consider patterns over time. Leitner (2015:12) says "*mutability is the property that all living structures - whether they are modeled as organisms or as ecospheres - have: to be continuously in transformation. We could name this property with the concept cluster changeability { changeability, adaptability, flexibility, movability, fluidity }*".

Other Vibrant Environment: While this is not a property of the building itself, it is a property that must be present in the environment for a learning building. It is seen by evidence of life, insects flying around, appropriate lush vegetation, and an absence of disrupting factors like trash, damaged and dying trees due to trauma or major disease outbreak.

Lebendigkeit (QWAN / Quality Without A Name / beauty / liveliness / vitality / vibrancy / sustainability / viability / resilience / livingness).

Wholeness not quite the same as Lebendigkeit, but may be used in place of it or vice-versa in some texts.

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Appendix II: A property matching sheet template

See Appendix III for how to use this sheet.

Property Matching Sheet for pattern language / pattern writing: *pattern name here*											
							Archetype			CaseStudy 1	
						Archetype	Archetype				
Property #	Property name	Description	Graphic	Notes	Case text	Archetype	File source in pattern repository			Description of feature for each property for the case - NP written where not present	Mitigation, if the property seems to be compromised from the ideal, state how is it so compromised	File source in pattern repository
	1 Levels of Scale											
	2 Strong Centers											
	3 Boundaries											
	4 Alternating Repetition											
	5 Positive Space											
	6 Good Shape											
	7 Local Symmetries											
	8 Deep Interlock and Ambiguity											
	9 Contrast											
	10 Gradients											
	11 Roughness											
	12 Echoes											
	13 The Void											
	14 Simplicity and Inner Calm											
	15 Not-Separateness											
(16)	Mutability											
Other												
	Lebendigkeit (QWAN / Quality Without A Name / beauty / liveliness / vitality / vibrancy / sustainability / viability / resiliance / livingness)											
	Wholeness	not quite the same as Lebendigkeit, but may be used in place of it or vice-versa in some texts										

Table 1Property Matching Sheet for using as a checklist during pattern writing Source: Own work Copyright: Marcus Petz

Appendix III: A methodology for writing a pattern language

This appendix explains how to write a pattern, and once aggregated these become a pattern language, which can be, applied in different domains, such as building design, pedagogy etc.

There has been no standard way of writing a pattern language, either in methodology nor in output format, though there are suggested best practices (Wellhausen and Fiesser, 2012; Fehling et al., 2014). So here is my proposed format. It does not use a tool chain, though this can be helpful in pattern writing it is not essential (Fehling et al., 2014). If I was to describe it (this methodology) I could do that in the format that would make it a pattern, but it would not be a pattern language on how to write a pattern.

Meszaros and Doble (1998) claim to have written a pattern language for pattern writing, but it could be argued that what they have is a pattern and not a pattern language. The Gang of Four have made a useful template (modified for my own use here) for pattern writing (Gamma et al., 2014) and there is an abridged version by Lea, (2014a), who made a handy checklist for pattern writing (Lea, 2014b). These are useful for both pattern and pattern language writing. It seems a good idea to follow the same presentation format where possible upon writing a pattern as would be followed for writing a pattern language.

I aim to make descriptors that touch on all 15(16) properties in my pattern language. In addition, there is a general description and name of pattern language. The process consisted of reading several patterns, and also looking at the built structures (buildings, real or virtual) I had considered, having encountered them in Thailand and other places.

I am a member of the *pattern science community ittoCA* Facebook Group (ittoCA means in the tradition of Christopher Alexander) and the predecessor *Lebendigkeitswissenschaft* Facebook Group. Both of these groups are administered by Helmut Leitner and include practitioners and students of pattern theory. I asked the wisdom of the crowd on these groups for suggestions and feedback on my ideas. Such a community of practice helps to make a grounding philosophy and knowledge base to understand what you are doing re pattern languages (Henshaw, 2015).

I think it is a good idea to date your patterns and put a named author on them and archive them somewhere so that they can be updated, or accessed by others.

Methodology for Writing a Pattern Language

Have an *idea*, but not a fully worked out concept, of what you want to make a pattern language about. Try to keep it loose and flexible so not formulated precisely in writing. If there is already a pattern language you find, then you will not go through these steps. Alexander framed this idea as "*a problem in architecture*" (Salingaros, 2000:15).

To create a pattern language read through similar and allied patterns to your idea. Note semantic distance from your desired pattern language. Make a *scratch document* of ideas from that. This forms a *discussion* in some patterns, for example the Political Settings Pattern of the Public Sphere Project (Barker, 2008; Schuler, 2008). But in our case we are making a pattern language

so that includes a number of patterns that may have their own discussions and there is no need to repeat them in toto.

From that discussion and ideas in your mind make a *pattern repository*. The repository is a collection of relevant ideas, images etc. Explicitly it is a collection of patterns (Fehling et al., 2014), but it is sensible to include related information in it too. There is an interaction as when adding to the repository, you annotate the scratch document, but you will already have an idea what you are looking for or you cannot look for it! This requires all the techniques of observational science, using librarian skills (Schwartz, 2016) and where possible seeing the actual patterns as they manifest in a user based context. Only then can the tacit knowledge aspects be brought out. Data or pattern mining is useful here too (Iba and Isaku, 2012).

Ideally, a pattern should be developed from something you are culturally familiar with though, as patterns are supposed to be universal and generalizable, a cross-cultural comparison can highlight aspects that may not be apparent in your own culture. For example, from a gender empowerment perspective the need for a gendered space such as a man's space may not be obvious from a patriarchal society (Martinez, 2012) that already has men in control in most environments. This is exemplified by the situation of male retirement, when men are not allowed in the house where they habitually sleep during the day in Northern English culture, perhaps for good reasons, as shown with Retired Husband Syndrome (Bertoni and Brunello, 2014).

From the repository can be taken ideas that work with the properties. Qualitative data analysis software such as Atlas.ti and MAXQDA can help with this organizing and analyzing phase (Miles et al., 2013). The product of this is a *property matching sheet* as seen in Table 1, Appendix II. The repository is the evidence that backs up what is on the sheet. In my case I used Microsoft Excel to make the sheet, but a database program could be used or even writing by hand on paper or cards which allow moving around of the properties on a desk, drawing board or floor in different community of use situations. A database program would allow the repository to use the same software.

At this point you can *name the pattern language*, and try to suggest an *archetypical example* or examples of where you can see the pattern language manifest (these will be patterns). These are called reference types (Fehling et al., 2014). In all probability you will not find the ideal example manifesting in life, but will find elements in different situations. I took the property matching sheet and added it to the Gang of Four's *pattern writing template* and modified it for *pattern language writing*. This gave me a *pattern language sheet.*

You can create a *short description* (called a *card* by some) (see Anti-pattern card for some of these for patterns (Schuler, 2013), which are more for practical usage (Schuler et al., 2011) from that sheet. A *long description,* which is broken down into the properties, is found on the pattern language sheet. Thereon explain the properties in a concrete way with concrete examples. There is no standard way to arrange or group these. But the way I grouped them seemed logical to me.

It will be clear that there is an interdependence with the properties and so it maybe you want to create more or make fewer properties. Try to stick to the canonical 15(16). Try and describe

them and give examples in equal measure for each property. Aim for a range of relevant patterns to be put on that sheet to give a balanced pattern language output that is comparable and followable by others. This can be assured by "*shepherding*" whereby someone else supports you to write a pattern or pattern language to a high standard (Harrison, 1999).

Connections to wholeness requires that the patterns interact with other patterns to manifest Lebendigkeit in the real world. Do this on your pattern language sheet by suggesting other compatible patterns (or pattern languages) that may be required. For example, a pattern for a functioning library also requires access by transportation or ICT, and a population that has been educated to use a library. Some people categorize the patterns they have in their pattern repository in subjective ways (Group Pattern Language Project, 2004). As there is no standard taxonomy of patterns you must draw your own system boundary, but you will need to at least consider for any pattern a *triad* that includes the users (social pattern), the physical construct (building pattern) and the interactive environment (the place identity and environs of where the pattern is manifesting). These should be explicitly stated in your final *Pattern Language Sheet*. Therefore, in the case of Appendix V as the sheet is a *pattern language for a learning building* then a *pattern language for pedagogical patterns* should be stated. The triad is related to sustainability, which can be seen in the five capitals approach (Porritt, 2007), and those capitals would need to be taken into account when implementing a pattern language.

There is an aspect here that is confusing. Patterns and pattern languages are not the same, but any *idealized* pattern must contain all the features found in a pattern language. We lack enough data and scientific knowledge to say for sure, but the suspicion is that there is only one pattern language. I explored this thus:

"*To me it seems simple, there are many PATTERNS (cases if you like collected in case studies) and they share features that can be generalized called a PATTERN LANGUAGE. Some people claim that every PATTERN LANGUAGE must fulfill 15(16) canonical PROPERTIES and that they are equivalent across all Pattern Languages so really there can only be one pattern language* (Petz, 2016:para 1).

Others say they vary and not all properties are in every pattern language so there can be different pattern languages. Some use pattern language to mean in each domain so to them domain is buildings, carpets, clothes, software, organizational forms, process forms etc. Others do not like the term domain and use the term generation or categories or application cases (Ibid:para 2).

My suspicion is that all canonical properties do occur in everything, but quite how many there really are that fit the canonical definition as discrete codependent properties is debatable as we have not studied them enough. If we still cannot agree with Linnaean Taxonomy nor many other ontologies after the amount of work done on them, I am skeptical that humans can be assured for the PROPERTIES and thus patterns and pattern language (Ibid:para 3).

I also think it must be remembered that these only apply with wholeness, and Lebendigkeit, without that vitality we would be only looking at elements and I think often we are only looking at elements as the interconnectedness means they serve as heuristic proxies for other properties.

We should be looking more at the interconnectedness and I realize with my own work that doing that is quite difficult as:

I do not have the taxonomy for describing that to others, the knowledge graph software to map it nor a common standard on how to talk about it. I also lack standards on how to measure it in emergent multi-criteria (multi-property) interactions. I have a fair idea how to do these things and can see them, but telling others in a way that is consistent and meets their standards no. I personally feel it is like trying to explain illness without awareness of viruses or germ theory in your audience. Not impossible, but unwieldy" (Ibid:para 4).

As the properties have an interdependence, atomizing them seems superficially a good idea for understanding, but focuses on the idea of separateness and not integration. Instead a better focus would be on the interdependence and describing that. A semantic network that explores and explains the properties in that context would be better. There are several problems with constructing these at the moment:

1. Most people are trained to think with Aristotelian logic of categories and separateness and not integrally or with systems theory so do not have that way of looking at things. Thus they are unpracticed at doing it, default to the wrong way of looking and cognitive overload with mistakes can easily arise (Leitner, 2015).

2. The way of representation is inconsistent between individuals. Just like we can represent mathematics with different semiotics, for example spatially as Pythagoras did with geometry (Riedweg, 2005) or with calculus as La Place (de Laplace, 1882) did.

3. The semantic views of one person are different from the semantic views of another, this is a philosophical question of ontology, but makes it difficult to produce a standard view-point about how the relations are in terms of emphasis, comprehensiveness or order. Operational features (like the relationship of boundaries to strong centers) may be confused with cosmetic features (like color).

4. Emergent properties make representation and expression difficult, it is like trying to show a 4-dimensional world in 2 dimensions. There is a degree of learning required to understand this conceptually.

To deal with this I suggest that a *pattern language knowledge graph* is used. If working using computers, then a 3-dimensional knowledge graph can be constructed from relations and dependencies of properties (Wang et al., 2014). This has the advantage of showing visually the interdependencies, though it can be converted to trees, tables and fields for 2-dimensional understanding, perhaps as a pattern language appendix to the pattern language sheet. This lesser dimension display is not so good for grasping the wholeness, though it can be useful to show elements, perhaps with pattern cards (Schuler et al., 2011). A computer mediated knowledge graph can also allow the 16th property of mutability to be included and linked in with other patterns and how they may affect and interact with your pattern. Weaknesses in the pattern description and gaps can also be more readily visualized by looking at the format of such

arranged patterns (Pujara et al., 2013). Others have tried to do this with a piece of software called SPSS (Iba and Sakai, 2014).

This methodology is idealized as can be seen in Table 2 *Flow chart of pattern language methodology*; every individual will approach and think differently, they will also come across different aspects of the pattern language they are working on at different times and different ratios. They might not think linearly, but more likely in a circular way, especially if they are more practiced at this way of approaching knowledge. However, all the elements should be covered to make a pattern language in the end, both to avoid redundancy and for cross checking. Here I have described a methodology for doing what is a complicated multifaceted process. Such a process needs different perspectives, which is hard for one individual to have, but easier in a properly constituted group of people working collaboratively. This is how Alexander did things with a small group of five colleagues (Alexander, 2007).

```
IDEA ------------------> SCRATCH DOCUMENT --------------> PATTERN REPOSITORY --------------> PROPERTY MATCHING SHEET  -> Pattern Name

  read other patterns                        discussion                        analysis                                -> Short Description

                                                                                                                   -> L N  DES
                                                                  ----------------------------------------------->  O G    CRIPTION

TRIAD & RELATED PATTERNS

================================================================> PATTERN LANGUAGE SHEET
================================================================> PATTERN LANGUAGE KNOWLEDGE GRAPH
```

Table 2Flow chart of pattern language methodology Source: Own work Copyright: Marcus Petz

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Appendix IV: A pattern language template

Here is a template to fill out. The result is a usable pattern that can be applied in different usage cases. This is a template and in Appendix V it can be seen how it will look once completed. All the italic text should be replaced or deleted when filling out the template.

Pattern Language Name:

Name of pattern goes here

Note: use italics for all references to pattern names per Meszaros' pattern writing patterns.

Aliases: *Aliases (or none)*

Problem:

Give a statement of the problem that this pattern resolves. The problem may be stated as a question.

Context:

Describe the context of the problem.

Forces:

Here is a description of the forces influencing the problem and solution. This can be represented as a list for clarity.

- Force one
- Force two

Intent:

What does the design pattern language do?

What is its rationale and intent?

What particular design issue or problem does it address?

Properties:

15(16) properties and examples showing the pattern language in application (patterns and then subcategories of properties or elements may reveal this as well as full cases). Be succinct and comprehensible.

Known Uses:

List or describe places where the pattern language is used. Examples of patterns found in real systems. We include at least two examples from different domains.

Archetypical Pattern:

Give an example implementation of the pattern. This can be code, pseudo code, case studies of implementations of patterns using this pattern language. There should be ideally one archetypical case.

- Applicability:

What are the situations in which the archetype design pattern can be applied? What are examples of poor designs that the pattern can address? How can you recognize these situations?

- *An applicable situation*
- *Where is it not a good idea to apply the pattern?*

- Consequences:

How does the archetype pattern support its objectives? What are the trade-offs and results of using the pattern? What aspect of system structure does it let you vary independently?

- *A consequence bullet. Description of consequence*

- Implementation:

What pitfalls, hints, or techniques should you be aware of when implementing the archetype pattern? Are there language-specific issues?

- An implementation Bullet. Description of Bullet

Image:

A sketch, photo, plan etc. Describe / annotate if needed.

Related Patterns / Pattern Languages:

List or describe any related patterns / pattern languages.

What design patterns / pattern languages are closely related to this one? What are the important differences? With which other patterns should this one be used?

e.g.

Author(s): *Author's name here or "as told to" for pattern mining*

Date: *Date string goes here, 2016-12-31*

Contact:

Pattern Language Source:

References:

Give a list of references cited in the pattern language.

Keywords: *Give a comma delimited string of terms used for searching.*

Appendix V: Pattern language: learning building for natural resource management

Here is a sample filled out pattern sheet. Many of these are needed to accurately make a pattern language.

Pattern Language Name:

Learning Building for Natural Resource Management

Aliases:

Wild-area Practical Knowledge Center; Learning Constructions for Wilderness Protection

Problem:

Where can communities of people learn to care for natural areas in close proximity to the areas?

Context:

People live in ecosynergy with their surroundings. They must cherish the foundations of their existence to maximize wholeness and Lebendigkeit. To do that they must understand themselves and their place within those locations. As environments will vary so will the places that they can learn how to do this in. Embedded learning, which is situated with place identity and takes into account multiple learning intelligences, cultural and belief systems still needs to be mediated by the ecological reality.

This pattern language is useful to anyone that tries to give service provision to the people in a community with an interest in an area. This might be researchers, students, residents or tourists. It also thinks about restoration, maintenance and community development in the context of sustainability over time.

Sustainability means all metrics of sustainability and for the whole ecosystem not just a financial corporate sustainability. Its scale varies from an information circle along a forest trail to a network of linked, but discrete facilities, which nevertheless are bounded and connected to one area.

These facilities make up the built environment as a building pattern*, which is embedded in an ecosystem that includes* social patterns *and a* specific natural ecosystem. *These may in turn connect with others in other locations to make a* network.

Forces:

Natural capital: the particular natural ecosystem and its system boundary definition shapes what is possible in terms of built structures.

Building capital: the built environment legacy structures influence how a site can develop, which will be based on the existent material capital therein.

Human capital: the knowledge and skills of the people present in the community influences what is conceivable and constructible.

- Participants, Participant Name, Responsibility for what.

Social capital: the social patterns present influence what is wanted and considered acceptable for the community.

- *Which communities of interest need to be considered in implementing a pattern in this pattern language?*
- *Collaborations - How the participants collaborate to carry out their responsibilities*.

Financial capital: constrains options to what is affordable.

Technical capital: suggests what can be done on that location with the tools available to construct or alter a site.

Institutional / political situation: has a macro effect on what is considered acceptable or desirable in achieving a good implementation of patterns using this language.

Intent:

This pattern language allows a given ecosystem and community to develop a plan for connected facilities to take care of the ecosystem over time. It addresses the problems of, What should the building contain? What form should it take? What size of community can be catered to? How does it interact with the surrounding natural ecosystem? It specifies over time how the synergy between people and place can develop in a productive way. In the case of a degraded environment or damaged community, restoration aspects will be built in. In the case of less affected situations, it will allow maintenance and unfolding to continue and be fostered.

What is its rationale and intent?

People have become distanced from the natural world of which they are a part. Reconnection is needed. Learning how to be and how to be whole as a part of the natural world instead of separated from it requires strong centers to mediate that. Education, learning and teaching are all parts of the same coin that need facilitation for co-learning. Facilitation of natural wisdom requires purposive design and this language is a tool to makes that explicit via the patterns written with it in mind.

What particular design issue or problem does it address?

It is not clear what are the essential features needed when designing a learning building, rather than some other type of building. Many building planners follow a path dependency developed from urban planning, modernism and traceable back to Aegean halls with an open hearth (the megaron). Instead, they should be path dependent on the way nature is and a timeless way of

building. This pattern language helps to open up thoughts to a more ecosynergistic way of constructing. Thus is becomes clearer what features to design into a learning building project.

Properties:

15(16) properties and examples showing the pattern language in application (patterns and then subcategories of properties or elements may reveal this as well as full cases). Be succinct and comprehensible. N.B. these are not given here, as a full enough analysis of learning buildings has not been done, though they are considered in the main thesis and could be duplicated here.

Known Uses:

List or describe places where the pattern language is used. Examples of patterns found in real systems. We include at least two examples from different domains.

e.g. Lahu Learning Building at Suan Lahu, Doi Mot, Thailand

Cincinnati Nature Center, USA

Hubert Kuhn Haus, the 'teaching forest building' at Rosalia Lehrforst, Wiener Neustadt, Austria

Archetypical pattern

Archetype e.g. Lahu Learning Building at Suan Lahu, Doi Mot, Thailand

Applicability

- *An applicable situation – small-scale rural agroforestry extension service provision.*
- *Where is it not a good idea to apply the pattern? – Urban areas with disconnect from natural surroundings.*

Poor situations can be recognized by a community led participative process. Particular signs are low usage and care of the buildings. Lack of healthy interaction with surrounding areas. An assessment against other areas can help recognize where remediation can be applied.

From Pattern Language Source some analysis of encountered buildings gives examples of designs, some of which can be addressed by the pattern via retrofitting. Pattern repository has more info.

Consequences

N.B. not given here, as a cross-cultural study has not been done to enough depth to say.

Implementation

N.B. not given here, as a cross-cultural study has not been done to enough depth to say.

Image:

Cf. Lahu Learning Building in Pattern Repository. N.B. this is not included in the thesis.

Related Patterns / Pattern Languages:

Related Patterns: *School Design Patterns* - The Language of School Design: Design Patterns for 21st Century Schools (Nair et al., 2013), Cookbook *(Luminen et al., 2015)*; a university, a plantation; a MOOC,

Related Pattern Languages: *pattern language for pedagogical patterns* (Bauer and Baumgartner, 2010)*; pattern languages for social change* (Schuler, 2008)

Author: *PETZ, Marcus*

Date: *2016-08-08*

Contact: *Not given here.*

Pattern Language Source:

Learning in Indigenous Mountain Forest Communities. Case studies in Northern Thailand: White Hmong (Miao), Sheleh Ladhulsi (Lahu), and Pgak'nyau (Karen) Peoples. Master Thesis, Petz, M. 2017.

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Keywords: *None given here.*

Appendix VI: Research questionnaire Thailand

Here is a semi-structured interview crib sheet I took with me to Thailand. I made appropriate sheets for different interviews. Then I recorded or annotated as appropriate from the interviews.

This is a short questionnaire so I can learn about your life and how you learn about managing farming and the forest areas where you live? If you want to ask me anything please do. You can also add something later that you might not fetch from your memory right now.

1. Please tell me about your personal family situation? Are you single, married, with a partner? How old are you? Where do you live? Is it your home? Where did you grow up?
2. What does learning mean to you?
3. Can you think of any examples where you learnt something new? Please tell me about what happened?
4. FREE listing of plants and animals that you know that grow or live near to you – In the wild? That you farm or have farmed?
5. Have you ever cut down a tree – if you remember tell me about the first time you cut down a tree – what happened? What kind of tree and where did the wood go?
6. Can you draw me your family tree?
7. Who was the most influential in the tree in how you are today?
8. Is there anyone else from outside the tree that has taught you / that you learnt things from? How do you know them? How did they teach you? When and Where?
9. Have you any formal education? If so what did / do you study? Why study that?
10. Where did you study? And how did you learn?
11. Are you in any clubs or societies? / Have any hobbies? What do you like to do for fun?
12. Do you read? Watch documentaries (factual programs that show history or nature or politics in about an hour long explanation) – what do you like to see on TV? Listen on the radio?
13. Do you know any folk songs or stories or poems? If so what in your personal culture is special from these and are any related to natural resource management?
14. Which festivals / fests do you celebrate / enjoy? How do you do that?

15. What is your vision / dreams for yourself? For where you are living now?

16. Many people worry about the environment and that it is being damaged by how we live today? What do you think of this worry? How do you relate to the environment?

17. Why are forests important from your personal perspective? Put a cross in all boxes that apply:

Climate Change Protection	**Repository of National Culture**	**For Natural Resources**
Place of Refuge / Escape	**Powerful Places to Be**	**Religious / Spiritual**
Scientific Research	**Sense of Community**	**Hunting**
Foraging	**Employment**	**Nature Protection**
Natural Disaster Prevention	**Prestige / Political Power**	**Biocultural Landscape**

18. Do you farm now?

19. Do you or did you do anything towards the roads, ditches or infrastructure around the land?

20. Where ever did you learn to tie knots, and build bamboo poly houses?

21. How would you build a house? Where did you learn to build houses? Find the right wood for the beams? How do you tell it is a good tree for this purpose?

22. Do you collect any wild plants from the forest? If so what and who did you learn about which ones to collect?

23. Do you cultivate these at all? Do you use them for medicine, food or other purposes?

24. Do you make anything artistic that is inspired by your surroundings? What?

25. Do you cook? What do you like to cook? What is your favourite recipe?

26. Do you make any preserves or bakeries which keeps more than a day?

27. What's in your fridge?

28. Do you store any food at your house? Anywhere else? How do you store it? How much?

29. Do you swap / give / trade what you produce / gather to anyone else?

30. Do you have any animals?

31. Did you / do you hunt or fish? How did you learn to do this? How is it with these things?

32. Does your religion or beliefs affect how you relate to the land, the forests and fields nearby?

33. What do you think of the local programs toward forestry / farming?

34. The government ones?

35. How would you like supranational bodies to affect your situation in the next few years? (ASEAN, UN, EU)

36. If you wanted to change any policies / subsidies or support how is that?

37. Is there anything else you would like to add?

Appendix VII: Informants

Several of my key informants wish to remain anonymous. I have employed appropriate pseudonyms in the thesis. Here are the pseudonyms with some details about these informants.

Emäntä Parantaja: A White Hmong woman in her 50s. She has her own house and grown-up children. Her mother lives near her. She does not speak any language I speak, so I spoke with her via a translator. She is Christian. She comes from a rural background and has been engaged in natural resource management as part of her family tradition.

Nuori Kisälli: A White Hmong man. A recent graduate. He speaks passable English, so I spoke with him in English. He does not have strong religious beliefs, but is aware of Hmong kevcai and has Christians within his family. He comes from a rural background and has been engaged in natural resource management as part of his family tradition.

Veli Tietäjä: A White Hmong man. He works as an educator. He speaks good English. He follows Hmong kevcai ways as a religion.

Table 3 Personal communications from other informants

No.	Name	Date	Location	Informant details.
26	Spanuth, Milla	15.July.2008	Castuera, Spain	A development worker from Finland at "Learning to Create Changes" ICYE training.
1	Casidy, Jennifer	2014	Doi Mot, Thailand	Philosopher.
2	Jowalu, Oshi	2014	Ban Nong Tao, Thailand	A Karen man.
3	Petz, Christopher	2015	Ruskington, England	A retired head teacher.
5	Weiß, Gerhard	14.Oct.2015	Vienna, Austria	An academic at BOKU specialized in innovation and forest politics.
6	Elliott, Stephen	2014	Ban Mae Sa Mai, Thailand	An academic at FORRU-CMU.
9	Andriyana, Wiene	2016	Vienna, Austria	Employee at CIFOR and doctoral student at BOKU.
12	Lehtinen, Vesa	5.Oct.2016	Tampere, Finland	An Oxbridge tutor in secondlife and a professional librarian.
13	Petz, Christopher	2010	Sleaford, England	A retired head teacher.

14	Luminen, Heikki	15.July.2015	Tampere, Finland	Lead architect of the Finnish Education Group.
15	Nahrada, Franz	27.July.2016	Vienna, Austria	A PURPLESOC conference attendee and Director of GIVE research lab, Vienna.
16	Pinchbeck, Lesley	2000	Heckington, England	At this time Chair of Heckington Village Trust and a former county councilor.
18	Anonymous	25.March.2016	Skegness, England	Former employee of Church Farm Museum.
20	zur Strassen	2014	Doi Mot, Thailand	Co-founder of Suan Lahu organic coffee farm.
23	Tomkins, Matthew	21.Aug.2016	Grantham, England	A forestry professional working at the Woodland Trust in England.
25	Schume, Helmut	14.March.2017	Vienna, Austria	An academic at BOKU specialized in soil and climate science.
26	Kisälli Sr.	2014	Ban Mae Sa Mai	Former refugee from Laos and White Hmong man.
27	Jowalu, Oshi	2014	Ban Nong Tao, Thailand	A Karen man.
28	Jowalu, Oshi	24.May.2016	Ban Nong Tao, Thailand	A Karen man.
29	Siwapataraprom , Naeng	2014	Ban Mae Sa Mai	Hmong man who worked for FORRU-CMU.
30	Elliott, Stephen	2014	Ban Mae Sa Mai, Thailand	An academic at FORRU-CMU.
31	Das, Suvadeep	20.12.2016	Pispala, Finland	A performance artist.
32	Anonymous	2014	Doi Mot	4 people separately gave this criticism.
33	Odachaw, Sway	2014	Ban Nong Tao, Thailand	The son of Joni Odachaw, a Karen man.
34	Jowalu, Oshi	2014	Ban Nong Tao, Thailand	A Karen man.

Appendix VIII: Manifesto of ethical applied development research principles

I wrote a manifesto some years ago and followed this as an ethical practice in doing my research as there did not seem to be manifesto or ethical statement directly for development action based research.

Manifesto of Ethical Applied Development Research Principles

I will accord with: The Core Peer 2 Peer Collaboration Principles (P2P Foundation Contributors and Bauwens, 2013), principles for ethical educational research (McWilliams, 2010) and the Internet Research Ethics (Buchanan and Zimmer, 2016).

Specifically this means:

My work is done for the needs and interests of both those who benefit directly from the applied development and those applying the development – for in some ways we are the same.

I will try and meet the needs of what my chosen communities want, and take them at their word.

I shall not offer prescriptive nor proscriptive – this is the answer type responses - and not, for example, guess that if they knew more about the world they'd want something different. Notwithstanding this, I will express my truthful opinion if asked for it or when giving final recommendations if at an appropriate place in the research, publication, practice circle.

I am not to decide whether a community's interests are good or right; it's only my job to work in service of those communities.

I will represent my work in ways that support ethical decisions by policymakers, external stakeholders and those who participate in my research. Further to this I will outline the risks / benefits as far as I am aware to participants, stakeholders and funders at regular and appropriate times before, during and after the research.

All applied development research is social activism, and as such a researcher I am a social activist. There is no such thing as politically neutral applied development research. Thus I will endeavor to make my belief system clear, to myself, the communities, individuals and stakeholders I will work with.

I will refrain from research or procedures that the community does not want and likewise with any individual. I will allow them to withdraw their cooperation or consent at any stage of the research. This means they must have given their consent to withdraw it, where possible I will try to obtain explicit consent before engaging with individuals, where implicit consent is given I will make it clear that, the research is only valid after explicit consent is given and a priori research has not been consented to and will be discarded.

I will make my research aims, procedures and interactions with others transparent, open and useful as far as I can respecting confidentiality and protecting vulnerable people or groups of people who I may interact with. I will inform appropriately to do this.

I will conduct research and methods in cognisance of ecological, socio-cultural and economic sustainabilities. My aim will be that the products of research are distributed with justice.

I shall research with an awareness of the distinction between private and public and not regard the private as automatically public. So for example taking photos in a public place does not make those photos public just because they are not legally controlled. The same principle applies to methods, patentable products or procedures I may encounter in my research.

So far, these principles refer to a me / I relationship. However in a P2P situation a we/our aspect comes into play. I recognize that we are an emergent property in integrating in a collective research practice and my actions and non-actions shape that dynamically. So I will research with this in mind.

I recognize that my research creates a for use value that is a commons that will benefit the group; rather than a for exchange value for the individual and will research in that way. We will make the for use value available to users and stakeholders.

There is no expected nor given reciprocity with specific individuals for taking part in the research. So no paying people to give voluntary participation and no expectation on my part that others will reward me for doing the research. Appropriate (in respect to all the other parts of the manifesto) gifts or compensation for loss will be acceptable in my research.

I will try to work in a flat, non-hierarchical way that empowers others as I am empowered. I will avoid vexatious bureaucracy where I can legally do so.

I am conscious of the peer circle that is created by my and other interactions in research or possible research investigations and shall seek to foster that as a wholesome peer circle through time and place. The research will try to create a free culture of peers rather than a permission culture of individualists.

Posted under a Creative Commons Attribution-Share Alike 3.0 license by author (Petz, 2012).

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Appendix IX: Proclamation on rural resilience

I co-wrote this with members of the Humiliation Studies people to advocate at a United Nations meeting in New York that touched on indigenous issues while I was researching in Thailand.

Human Dignity and Humiliation Studies

World Dignity University

Bringing dignity to learning, globally and locally

Proclamation on Rural Resilience

The Millennium Development Goals have achieved many of their aims. Now we look to the future for the next period of sustainable development goals.

We miss an important perspective that we feel should be accounted for so that the spirit of sustainable development is in accordance with current thinking and includes all the peoples of the world.

As a result of two conferences focusing on dignity and humiliation, which included two field trips to the northern parts of Thailand, we urge to explicitly include rural communities within the future goals. We want to particularly highlight that indigenous peoples commonly live in rural communities and that they are neglected by the general thrust as it is now.

We call for a **Sustainable Development Goal on Rural Resilience or Rural Renaissance**. We strongly feel that indigenous peoples' values and skills with respect to nature are crucial for human survival on our planet. Indigenous peoples have the right to be seen and heard, and the world needs to listen and learn from them. It is critical to include the wisdom of women, men and children from these communities in goal setting and achievement. A transparent, open and inclusive process with indigenous, rural and marginalised groups is therefore urgently needed to work out the concrete details.

Suggested areas to be focused on:

• Education:
Education systems need to be adapted to value and formally recognise experiential and indigenous wisdom, learning and knowledge. It is imperative that education systems be adapted to allow indigenous and rural people to maintain their cultural traditions and practices in harmony with their local environments. In developing and developed countries our world has become globally connected. Many local villages cannot function within the global village. Their cultures are being exterminated by the larger modern world. Many innovations carry a dilemma that requires more attention. Education, TV, media and digital facilities, for instance, can provide opportunities for better global cooperation to protect the diversity of indigenous cultures, or they can wipe it out.

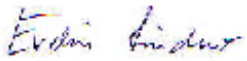
▪ Economy:
Market forces and capitalism need to be mitigated to avoid that a modernist perspective from urban areas overwhelms and destroys what is of value in indigenous spaces. Ecological sustainability is enhanced by local production and consumption. Women, men and children need have the chance to be meaningfully included in making decisions that affect them and their localities. To allow this to be effective, capacity building and resource allocation need to be included into policy planning. People from businesses, NGOs and governments are called on to collaborate to build local capacities for people to voluntarily form entrepreneurial entities such as cooperatives, companies and NGOs without prohibitive costs or bureaucracy.

▪ Governance:
Most important is that governance in peripheral and rural regions is strengthened and capacity built so that indigenous and rural people are able to walk with two legs, we were told: One leg in modern society, and one leg in traditional, rural, indigenous societies with due respect for cultural aspects like minority languages, songs, stories, poetry, dress and other customs. Rural regions are vulnerable when atomised as small villages and communities are therefore in real need of support to form networks, agglomerations of villages and other structures that allow autonomy and self-supporting ways of being in governance and in service provision.

On behalf of the international participants of the 12th Urban Culture Forum, titled *Arts and Social Outreach - Designs for Urban Dignity*, at Chulalongkorn University, Bangkok, Thailand, 3rd - 4th March 2014, and the 23rd Annual Conference of the Human Dignity and Humiliation Studies network and the World Dignity University initiative, titled *Returning Dignity*, in Chiang Mai, Thailand, 8th-12th March 2014

Chiang Mai, Thailand
14th March 2014

Sincerely,



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- Affiliated with the Maison des Sciences de l'Homme, Paris, www.msh-paris.fr
- Teaching globally (www.humiliationstudies.org/whoweare/evelin.php)
- See lectures on dignity and humiliation given at the University of Oslo in Norway, since 2009 (in English and Norwegian) at www.sv.uio.no/tjenester/kunnskap/podkast/index.html (search for Lindner)

Linda Hartling, Ph.D., Social Scientist and Humanist

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- Research Fellow and Past Associate Director of the Jean Baker Miller Training Institute (JBMTI) at the Stone Center, which is part of the Wellesley Centers for Women at Wellesley College, Wellesley, Massachusetts

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