Adaptive Capacity for Endogenous Development of Kuna Yala, an Indigenous Biocultural System

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A thesis

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by

Jane Marina Apgar

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This thesis presents collaborative research undertaken with the Kuna indigenous peoples in Kuna Yala, a semi-autonomous indigenous territory in Panama. The Kuna experience of ongoing governance through traditional practices was chosen as an informative example through which to build understanding of the underlying processes that support endogenous development with the objective of contributing to a reframing of development and supporting self-determination of indigenous peoples.

Complexity theory and a complex adaptive systems (CASs) analytical framework provide the theoretical grounding for a reframing of development as an endogenous process interacting across scales. The CASs framework guides a multi-scale analysis of Kuna Yala described as an indigenous biocultural system (IBCS) through merging complexity and biocultural approaches to working with indigenous territories. Through this framing, Kuna adaptive capacity which supports self-organisation becomes the central focus of the study.

Participatory action research methodology facilitated iterations of learning cycles with a reflection group of Kuna leaders, through which conceptual clarity of adaptive capacity as an emergent phenomenon was sought. Three key groups of practices where simultaneously analysed through in-depth qualitative inquiry at multiple levels of collectivity: (i) leadership development, (ii) personhood development, and (iii) networking. Findings from analysis of key practices enable holistic interpretations of Kuna adaptive capacity and governance processes and understanding of how they support endogenous development.

A key finding is that two levels of adaptive change support endogenous development. One level is consistent with adaptive management models, and I term the deeper level transformative change. Both operate through ongoing processes of reflection and interaction creating relational spaces, while transformation requires deeper levels of reflection which are facilitated through rituals. Findings on Kuna governance inform reflexive governance models by highlighting processes for linking between knowledge systems and scales for transdisciplinarity. Further, the Kuna case illustrates a fundamental role for ritual in supporting well-being across levels and scales of sustainability goals.

The analysis also highlights key areas of challenges the Kuna and indigenous peoples in general face in supporting their self-determination within the current context of an interconnected global system. The last chapters of the thesis discuss reflections on the findings which lead to highlighting leverage points for Kuna practice and supporting indigenous self-determination. Finally, some reflections are offered on the challenges and opportunities that complexity provides for re-conceptualising the role of development agencies and projects in supporting endogenous development locally.

Keywords: Complex adaptive systems, adaptive capacity, endogenous development, indigenous, biocultural, leadership, ritual, personhood, networks, governance

Acknowledgements

Table of Contents

List of Tables

List of Figures

List of Acronyms

AECI	Agencia Española de Cooperación Internacional (Spanish Aid Agency)
ANDES	Asociación para la Naturaleza y el Desarrollo Sostenible (Association for Nature and Sustainable Development)
CASs	Complex adaptive systems
CBD	Convention on Biological Diversity
CBOs	Community based organisations
CGK	Congreso General Kuna (Kuna General Congress)
CGCK	Congerso General de la Cultural Kuna (Kuna General Cultural Congress)
CLT	Complexity leadership theory
COMPAS	Comparing and Supporting Endogenous Development network
COP	Conference of the parties
EBI	Educacion Bilingue Intercultural (Intercultural Bilingual Education)
IBCSs	Indigenous biocultural systems
IIDKY	Instituto Integral de Desarollo de Kuna Yala (Integral Development Institute of Kuna Yala)
IIED	International Institute for the Environment and Development
ISE	International Society of Ethnobiology
NEGA	Nosotors Estamos Generando Alternativas (We Are Generating Alternatives)
NGO	Non-governmental organisation
PAR	Participatory action research
REDD	Reduction of Emissions from Deforestation in Developing countries
RPP	Ritual process paradigm
SESs	Social-ecological systems
SSM	Soft systems methodology
TEK	Traditional ecological knowledge
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development

Preliminary Remarks on Use of Kuna Language

In this thesis I use Kuna words for two reasons. First, to avoid repetitive translation of terms I use more than once, and second, to present Kuna concepts that are central to understanding the Kuna system from their perspective. For example, I use the term 'onmaked' to refer to the Kuna governance system because it encompasses the Kuna approach to governance which is a key theme. But, as Sherzer (2001, p. 19), who has conducted extensive linguistic studies of Kuna use of language says "…the representation and translation of Kuna words, concepts, and forms of discourse on the printed page present problems for both the author and the reader." In spite of this thesis not containing long transcripts and translations of Kuna discourse, it is still necessary for me to explicate the approach I have taken to use of Kuna words. My approach is less ambitious than that of a linguist, and is aimed at overcoming the problematic of cross-cultural research and representation while simultaneously enabling understanding for Kuna and non-Kuna speaking readers.

Extensive historical analysis of the Kuna language and its use by foreign researchers[1] along with less well documented efforts of Kuna linguists have fed into a Kuna initiative to establish a formal Kuna orthography and grammar. As an indigenous oral language, the process for establishing Kuna written language must be understood as part of a project of decolonization and is closely related to the Kuna Bilingual Education project. As Price (2005) shows in her analysis of the standardizing process supported by the Kuna General Congresses, defining a Kuna orthography and grammatical system is a linguistic, social and political endeavour. Using Kuna language in text prior to an agreed standardized form is indeed a complicated matter.

There are currently three proposed Kuna alphabets and each has a history of use by some authors (Price, 2005). In carefully considering my approach I follow in the footsteps of other recent scholars, such as the approach used by Martinez Mauri (2007) in her doctoral thesis. However, my use deviates slightly from hers. I have chosen to use what Price (2005, p. 89) calls the "w/u" system proposed by Lino Smith, one of the three proposed alphabets under discussion. Table 1 illustrates the components of this alphabet.

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[1] See for example (Holmer, 1946; Sherzer, 2001)

Table 1 Components of the "w/u" Kuna alphabet

(adapted from Price, 2005)

Voiced/voiceless stops	p, t, k b, d, g bb, dd, gg
Single/double nasals	m, n mm, nn
Single/double liquids	r, l r, ll
Fricatives	s, ss
Single/double approximates	w, y
Singular vowels	a, e, I, o ,u
Double vowels	aa, ee, ii, oo, yy

Common in all three alphabet proposals is the lack of differentiation between use of voiced stops 'b','d' and 'g' and voiceless stops 'p', 't' and 'k'. The consensus among Kuna linguists is that voiced stops 'b', 'd' and 'g' are used at the beginning of words. However, some words with political connotations such as 'Kuna' or 'Nele Kantule' (name of a Kuna leader) are likely to continue to be used with voiceless stops based on their common usage. A noteworthy feature of this alphabet is the use of double letters, such as 'bb', 'mm' and 'ss'. The use of double letters allows clearer pronunciation and differentiation of similar terms such as 'ina' (medicine) from 'inna' (fermented maiz drink). Further, the letter 'w' is a consonant, differentiating words which use the letter 'u', for example 'ua' (fish) compared to 'waa' (smoke).

I have chosen to use Kuna plural forms such as 'saila/sailagan' (chief/chiefs) or 'ani/anmar' (I/we or mine/ours) instead of using an 's' to pluralize as is done in English and Spanish. Further, some Kuna words have long and short versions, for example 'baba' and 'bab' (father), 'dupu' and 'dup' (island), 'igar' and 'igala' (path or way). The meaning of the word does not change when it is shortened. The shortened versions are used when a word that follows starts with a vowel, for example I use 'Bab Igar' (Father's Way) instead of 'Baba Igar'. In this case I use the shortened version of both 'bab' and 'igar', but it would also be correct to use 'igala'.

I am not a linguist nor am I fluent in spoken Kuna. I am, therefore, not suggesting that my use of Kuna in this work is linguistically sound, or that it is accurate in terms of word etymology. Above all, what is important for my purpose is to be consistent in my use of Kuna words throughout the thesis. By explicating my approach of aligning my usage with that of one of the three proposed alphabets I hope to avoid confusing those who read this thesis with no prior knowledge of the Kuna language, and to satisfy those with prior knowledge of Kuna

that I have taken care to be as accurate as possible. Nevertheless, some inconsistencies are inevitable as my knowledge of Kuna grammar is minimal, and as an emerging written language multiple spellings are common. In some cases common usage seems more important than grammatical correctness. An example where common use prevails over grammar is my use of 'onmaked' with a 'd' instead of 't' because this is the spelling that is used by the Kuna General Congresses to refer to their institutions. The reader is advised to use the glossary (provided in Appendix A) of all the Kuna words that appear in this thesis if confusion arises.

Chapter 1

Introduction

The third culture, of the rural people in a particular place, is the true centre of attention and of learning. As some officials were once told, "The village is the centre; you are peripheral". The micro-level is again and again out of focus: and when in focus it is seen from a distance, through the urban professional's telescope. (Chambers, 1983, p. 46)

1.1 Introduction

This thesis presents the story of the research I undertook with the aim of building understanding of the underlying processes that facilitate adaptive capacity for endogenous development of the Comarca Kuna Yala, a semi-autonomous indigenous territory in Panama. 'Endogenous development' refers to a local process of development which occurs in interaction with multiple processes across scales of time and space. The conceptualisation of endogenous development is framed by my use of a complex adaptive systems (CASs) approach to linked socio-cultural and bio-physical systems. Endogenous development is understood as driven by a local process of self-organisation, and is the vehicle for promoting the self-determination of the Kuna indigenous people. Adaptive capacity became the focus of inquiry due to its central role in self-organisation. Understanding what influences adaptive capacity, accordingly, informs understanding of how to facilitate endogenous development.

Kuna Yala is analysed in this study as an indigenous biocultural system - a complex linked socio-cultural and bio-physical system exhibiting biocultural characteristics which are the result of historic and ongoing development based on culturally defined models and processes of governance. Indigenous peoples are generally recognised as nurturing biocultural diversity in their territories (Maffi, 2005). The Kuna secured their territorial and governance autonomy through a historical process of negotiation and physical resistance (Howe, 1998, 2001). The particular context of Kuna Yala provides opportunity to develop critical understanding of the underlying cultural and social processes that facilitate endogenous development in indigenous biocultural systems. As a consequence of achieving an enhanced critical understanding of biocultural system dynamics, the inquiry aims further to understand processes that can support the self-determination of indigenous peoples generally.

This introductory chapter begins the story by describing how the research interests emerged out of reflecting upon my own praxis in engaging in community development processes. It continues by placing my emergent interests into current challenges of

development in a context of global crises and an era of heightened complexity. A research agenda that can support endogenous development must be able to speak to these contemporary concerns of development and indigenous peoples. A wealth of literature on the Kuna socio-cultural system exists, and I illustrate how my research agenda is a continuation of one strand of this scholarship and research. Finally, the research questions and objectives are restated before providing a brief overview and map of the chapters that make up the thesis.

1.2 Emergence of Research Interest out of Practice

The questions that were formulated into a research agenda emerged through my experience of working in sustainable development projects with indigenous communities in Latin America. The practice provided context for my reflections upon development as both practice and theory. It led to questioning underlying assumptions that informed my practice and that of development more generally. My experiences in the field over eight years included a variety of project contexts and roles. In Peru, I volunteered and was employed by local non-governmental organisations (NGOs) working with multidisciplinary teams in research on public health and community outreach with indigenous communities in the Amazon and the Andes. In Panama, I was a Peace Corps volunteer, working for three years in Kuna communities in sustainable agriculture and community development, and later taking on a regional leadership role for Peace Corps within the Comarca. I was then employed by an international NGO on a USAID funded project on integrated management of the Panama Canal Watershed, where I focused on facilitating community development through subcontracted projects for improved resource management implemented by local NGOs and community based organisations (CBOs).

   In my initial understanding of development that took me to the field, development projects were vehicles that could support the livelihoods and well-being of vulnerable communities. Working in local organisations in Latin America soon introduced me to emancipatory theories of development, such as the work of Paulo Freire (1986; 1992; 1998; 2004) and 'bottom-up' participatory approaches, influenced most notably through the work of Robert Chambers (1983; 1994a; 1994b; 1997). These influences built an understanding of development for supporting local livelihoods through locally defined models and processes. In practice, however, I found that bottom-up approaches faced considerable institutional barriers, even within agencies that promoted participatory practice. But even when these initial barriers were overcome, in cases where project formulation had aligned itself with local goals, and

communities participated in or were fully responsible for design and implementation, in large part, the projects failed to deliver on their promises.

It seemed to be that development agencies interpreted project failures in terms of mistakes (poor judgement or lack of technological or scientific knowledge) or poor performance in implementation. Such interpretations fuelled ongoing training and capacity building to improve project formulation and implementation. In Panama, for example, USAID funded projects had provided capacity building for a core group of local NGOs over several project cycles. There is no doubt that these NGO members are highly skilled and qualified, yet in the best cases their efforts marginally improved the livelihoods of a few, and in the worst cases projects led to increased dependency on externally funded initiatives. It seemed to me that in spite of the efforts of project teams to improve their participatory methodology, projects would always have unintended consequences and unpredictable outcomes. Development projects, as clearly planned and executed initiatives, were interacting with highly complex community processes. This suggested that development that actually leads to improved livelihoods locally relies on the underlying local processes that manage the complexity of community development. Accordingly, ignoring the underlying community processes means that development initiatives can only ever lead to partial impacts, and in some cases they may undermine or infringe upon local processes, leading to negative impacts. These reflections became the original impetus for my research agenda.

Further, my observation of development processes led me to recognise that the social processes that underpin community development are characterised by multiple interacting agents working on multiple aspects of collective life, and that the complexity of these processes makes them inherently unpredictable. Most development projects rely on models that simplify complexity by using a few key variables and logic models to decide where action is needed. For example, improving agricultural production should lead to economic growth, or building awareness of hygiene will reduce infant mortality, or building a cultural centre will empower community members. Attempting to influence complex processes of development using simplified problem analysis inevitably seemed to lead to unpredictable consequences. This was true of initiatives aimed at social and economic development as well as environmental conservation; natural and social systems are interacting and are complex. The efforts of development agencies to reduce or factor out unintended consequences through improving their practice might be important, but they are ultimately unable to provide new ways of working within the complexity of development as a social process.

Through reflecting on the failures of development projects, my interests moved from improving the practice of development projects to understanding development processes within communities. Development processes are the driving force behind community well-being, and the locus through which planned initiatives (internally or externally formulated) and their consequences (intended and unintended) are dealt with. With this new focus, I could reframe development initiatives as moments or opportunities within a wider process of local development fostering well-being. I recognised that if projects have any hope of positively influencing local livelihoods they must be aware of the local processes, and build approaches that are mindful of their exogenous nature. I also recognised that even so it could not be assumed that all development initiatives are potentially positive. Indeed, it would seem that a large portion of development initiatives that are funded through multilateral or other means continue to use top-down externally driven approaches, without cognizance of local processes. The role of local development processes is even more important when dealing with top-down projects, as they become filters for analysis and, when needed, for resisting negatively impacting projects. What is required is a larger lens through which to view and understand development, one which views projects as embedded in and interacting within a holistic local process producing well-being.

The shift in my focus from development as a series of projects or initiatives to an integral community process occurred through my experience in Kuna Yala. I first lived and worked in Ukupseni, one of the most populated Kuna communities where development projects managed by government agencies and local and foreign NGOs had almost become the norm. They would come and go, some with positive impacts, others with negative impacts and others almost entirely unperceived. They were viewed by some as opportunities for employment or financial gain, and by others as hostile impositions. They created a 'buzz' in the community regarding their particular focus (for example marine biodiversity management or tourism development), and community leaders became engaged in debates regarding the area of focus. Behind this activity of the projects there is always a daily process of collective life, both formal and informal. If development initiatives were to produce positive impacts, it is the organic process of collective life that produces the vehicle for their success.

I then moved to Colebir, a small, isolated coastal community where development projects that were externally formulated were brought to the community by development agencies. I witnessed a community using its collective processes to debate and deliberate over several months to decide if they would allow the projects and if so, how they would manage them. One development project was approved, the outcomes of which could be viewed as positive in

some respects, and negative in others. The distinction between a project and a process of development that is firmly rooted in the local became even clearer to me in this context.

My growing concern for understanding and supporting local community drivers of development from within was nurtured through collective processes. Kuna collectivity is relatively accessible to outsiders in Kuna communities. The particular context of Kuna Yala as a semi-autonomous indigenous territory with strong cultural identity, combined with skilled leadership and effective processes provided a profoundly different experience of development than my previous experiences. A central feature of how the Kuna facilitate development is their focus on collective process, and thus it has become an important focus of my research.

1.3 Indigenous Development in the Age of Complexity

My initial interest in understanding development became fine tuned through reflecting on the broader contemporary context of understanding indigenous development. A contemporary study of local development cannot ignore the current global scale challenges we face. These include the high levels of environmental degradation (UNEP, 2009), the food security crisis (CGIAR, 2009; Ehrlich, Ehrlich, & Daily, 1993), climate change (Richardson et al., 2009), and the recent global financial crisis (IMF, 2009), among others. Today's globalised world is one in which geographical and temporal scales are highly interconnected (Robertson, 1995). In this context, understanding local processes that are able to support the needs of local communities is inextricably linked to understanding and dealing with global processes. The central concerns of development today, whether local, global, environmental or social, are characterised by complexity, uncertainty and diverse social perspectives.

I call the current context the 'age of heightened complexity', and it has been conceptualised as producing a 'risk society' (Beck, 1992, 2009). In this framing, the consequences of progress and modernisation, such as technological advances, create new dimensions of risk that require new social and political arrangements. This understanding of the challenge of complexity casts doubts on notions of a 'knowledge society' (Drucker, 1994). In Beck's (2009) words:

> World risk society is a non-knowledge society in a very precise sense. In contrast to the premodern era, it cannot be overcome by more and better knowledge, more and better science; rather precisely the opposite holds: it is the product of more and better science. Non-knowledge rules in the world risk society. Hence, living in the milieu of manufactured non-knowing means seeking unknown answers to questions that nobody can clearly formulate. (p. 115)

My reflections on the failure and unpredictability of clearly defined development programmes attempting to influence poorly defined problems becomes more coherent through a conceptualisation of 'non-knowing' as a central feature of our time. The complexity and uncertainty that we face in global crises is challenging science and governance that uses disciplinary, deterministic problem solving and linear management approaches (Miller et al., 2008; Rind, 1999). Addressing the interlinked problems of development both locally and globally requires an approach that takes Castells' (1996) characterisation of the new global social arrangements of the 'network society' seriously. One such approach is offered by complexity science (e.g. Kauffman, 1996; Norberg & Cumming, 2008; Waldrop, 1992), which highlights a shift away from clearly defining goals and programmes, to facilitating processes for managing change and uncertainty. Complexity became a central focus of my research interest because it provides language and tools that can help in reframing development to focus on processes that support dealing with uncertainty locally within a networked globalised world.

Indigenous development in the age of heightened complexity is a particularly challenging arena. Indigenous peoples have historically suffered the effects of colonisation and discrimination, and continue to be marginalised (MRGI, 2007). The local processes that are the heart of indigenous development from within have been severely degraded as a result. In the age of complexity, these groups continue to be marginalised, pointing to ongoing questions of social and cultural inequality, illustrated by the climate justice debate that took centre stage at the Copenhagen UNFCCC COP 15 in 2009. Indigenous peoples have contributed the least to climate change yet are currently facing the most severe impacts (GHF, 2009), and continue to be marginalised from decision making (Polack, 2008; Salick & Byg, 2007). The age of heightened complexity and the resulting crises differentially impact vulnerable groups. Some call the vulnerabilities the result of 'double exposures' (O'Brien & Leichenko, 2000) to impacts of climate change and economic globalisation, but should perhaps more accurately be viewed as involving multiple exposures to global drivers of change.

A paradox exists between the vulnerability of indigenous peoples to the impacts of global changes that are a defining factor of the current age and the historical ability of some to develop sustainably. Many indigenous peoples continue to manage complex problems within their territories through their own organic processes, when much of the world is no longer. Some argue that they potentially still hold valuable knowledge for dealing with complexity (Ford, Smit, Wandel, & MacDonald, 2006; Posey, 2001; Stevens & De Lacy, 1997). The

particular relationship of indigenous peoples to the ecosystems they inhabit has allowed indigenous knowledge to become recognised both practically and theoretically as important in approaches that merge environmental conservation with development (Agrawal, 2002). In international policy frameworks, for example the Convention on Biological Diversity, the role of indigenous resource management is recognised as important, calling for states to protect and promote indigenous knowledge and practices as part of in-situ conservation (UN, 1992).

It is important to clarify that understanding an indigenous perspective to managing complexity is not based on an essentialist view of indigenous peoples as conservationists; efforts by indigenous peoples themselves to reflect upon their role in environmental degradation illustrates how misguided that would be[2]. Pointing out that indigenous knowledge systems are holistic and have a more interconnected view of people and nature (Berkes, 1999; Berkes & Berkes, 2009; International Council for Science, 2002; Rose, 2005) is not the same as arguing that indigenous management is conservationist, nor that it is infallible. It is, however, undeniable that there is an inextricable link between the world's cultural and biological diversity (Maffi, 2005; Posey, 1988) which is to a large degree the result of indigenous practices of engaging collectively in their territories. Biocultural diversity is an important resource for adaptation in the face of unpredictable changes, such as those the world faces currently. This highlights that local knowledge systems and local processes that have managed the relationship between indigenous peoples and the natural environment historically continue to play an important role for global sustainability. In the current age of heightened complexity indigenous peoples may have valuable lessons for us all. Within this context, my research has aimed to contribute to our understanding of historical and ongoing practices of indigenous peoples within biocultural territories.

There is also another motive behind this research formulation, which is rooted in my experiences of working with indigenous peoples and organisations. The local process of development that became the central focus of my research has also been the focus of efforts by indigenous peoples to gain more equality and restitution as part of decolonisation (Iorns, 1992; Kirgis, 1994). Recently, these efforts have reached a significant milestone, with the adoption of the United Nations Declaration on the Right of Indigenous Peoples (UNDRIP) in 2007, after over 20 years of negotiations. The UNDRIP is an international umbrella framework addressing the rights that indigenous peoples have within States and internationally. In the language of international policy, the process of development from

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[2] In the case of the Kuna this has been done quite explicitly see (Gonzales, 1992) and (Ventocilla, Herrera, & Nunez, 1995)

within is both necessary for and the result of self-determination. Article 3 outlines the process as a universal right of indigenous peoples "Indigenous Peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development." (UN, 2007) The research formulation has also been nourished by an intent of using systematic analysis to further understand the processes that are pivotal in the ongoing challenge of implementing the UNDRIP and promoting the self-determination of indigenous peoples.

1.4 Complexity, Change and Development in Kuna Yala

The Kuna are perhaps the best known indigenous peoples of Panama, not least because of the colourful hand sewn blouses worn by women, called *mola*, but more importantly because of their historic resistance to assimilation policies. The Kuna have been the subject of much anthropological work over the best part of the last century. James Howe's latest publication *Chiefs, Scribes & Ethnographers: Kuna Culture from Inside and Out* (2009) provides a review of the most insightful publications, analysing the role of writing and ethnography in cultural representation. As the title suggests, the relationship between the Kuna and ethnographers has not been one of clearly defined subjects and researchers, showing that the Kuna have played an active role in their representation through ethnography. This is coherent with my experience of working with the Kuna as a development practitioner and a researcher. Their ability to harness initiatives as vehicles to progress their own agenda or quickly reject ones that are thought to be negative supported a shift in my framing of development. At the heart of this ability are the Kuna collective processes which facilitate development from within.

My interest in Kuna development processes is not new. In fact, I follow a number of analyses of Kuna development that have been undertaken through doctoral research. The first doctoral thesis on the Kuna produced in 1947 suffered the consequences of its acculturation model, and according to Howe's (2009, pp. 187-189) analysis, inaccurately portrayed social change in Kuna Yala on a downhill road to cultural loss through assimilation. The next doctoral thesis that dealt with Kuna social change and development took a far more optimistic approach, and was the result of the first community based ethnography, conducted by Regina Holloman (1969). The study began much like this thesis, from an interpretation of the Kuna system as illustrating success in adapting to external stresses of modernisation through an internal process. In spite of the use of a modernisation framework it recognised the internal

capacity for development and change. A significant contribution of this work was to illustrate the central role of networks in development and adaptation.

Holloman investigated the Kuna adaptive process through a theoretical framework that was emergent at that time, known then as 'modern systems theory'. The framework that I develop in Chapter 2 for my analysis of Kuna adaptive capacity is based on the contemporary systems theory of complex adaptive systems. There are similarities in our approaches that echo their common history and starting point, but there are also significant differences. Similarities can be found in our approach to understanding how the Kuna manage or facilitate change from within. Notable differences include the particular approach to systems and systems methodologies employed, and a considerably different theoretical framing of development. In spite of these differences, the striking similarity between Holloman's and my aim, 40 years later, to understand the dynamic adaptive process of Kuna Yala is, if nothing else, an indication of the ongoing integrity of the Kuna system.

In the 40 years since the first community based ethnography occurred, an 'ethnographic boom' to use Howe's (2009) term, has produced a mass of publications on the Kuna. Perhaps the most insightful on the workings of the Kuna internal development processes are James Howe's doctoral thesis (1974) and his resulting book (Howe, 1986)[3] which provide a thorough analysis of Kuna village politics. In a similar fashion to analysing Kuna development as a dynamic internal process, he analyses Kuna politics through focusing on process and leadership acting through dynamic and complex fields of interaction. Themes that emerge from this work that I pick up on in my analysis include; an understanding of Kuna development processes as evolving, participatory and collective with leadership playing a facilitating role, and the harnessing of contradictory roles and characteristics within individuals and the collective (Howe, 2002, pp. 250-261) such as individuality versus collective identity. The most recent doctoral thesis on the Kuna, by Monica Martinez Mauri (2007) follows the tradition of analysing Kuna dynamic processes in interaction with the external world, and focuses on the role of leaders in networking and mediating between local and global processes. The complexity lens used in this thesis offers another vantage point for analysis of some of these recurring themes in literature on the Kuna.

The central place that ritual plays in all Kuna processes is impossible to ignore after spending as little as a few days in a Kuna community. It is not surprising, therefore, that most

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[3] James Howe's book *The Kuna Gathering* was first published in 1986. In referring to this work throughout the thesis, which is pivotal to my arguments, it is important to note the date of publication of the 1st edition. However, I have used the 2nd edition, published in 2002, and for bibliographic accuracy I use this edition when referring to direct quotes or specific sections.

ethnographic work that looks at Kuna development and collective processes have recognised the role of ritual leaders and practices as important. In particular, Mac Chapin, who first worked as a Peace Corps volunteer in Kuna Yala, and later wrote the definitive thesis on Kuna ritual and curing practices (Chapin, 1983) has been instrumental to understanding the Kuna knowledge system and spirituality as an integral part of individual and collective engagement, by treating it on its own terms. It has proved an insightful platform on which I build my own interpretation of the role of ritual in the Kuna adaptive process. In following the footsteps of a long list of ethnographers who have similarly been inspired and fascinated by the Kuna story I touch upon themes that have permeated anthropological research. In later chapters of the thesis I discuss how I contribute to the wealth of literature on the Kuna.

A central question that needs to be clarified at this initial stage relates to ongoing debates of how to accurately judge the Kuna success story today in relation to ongoing changes. As Howe (2009) eloquently shows, there is some truth in arguments of the Kuna story as one of success where many others have failed, while there is also truth in arguments of cultural loss as a real threat to its continued success, written about most directly by Chapin (1991). In crafting my approach I have not taken this contradictory reality lightly and have attempted to find an avenue that will permit my research to be both defensible and useful.

I developed a methodological approach for undertaking research into Kuna development processes rooted in systems thinking and collaboration (see Chapter 4 for details). By taking a dynamic and complex view of a linked socio-cultural and bio-physical system, research into development is undertaken as inquiry into the continued potential for fostering self-determination. Endogenous development is viewed as an emergent property of a process that maintains a delicate balance between conserving traditions and creating new ways and expressions. This complex systems approach is significantly different to the system approach used by Holloman (1969, pp. 42-51) to build understanding of the same processes. Her use of 'modern systems theory', based on the work of Buckley (1968) led to a retrospective approach to understanding change in complex systems, analysing systems through describing parts and using cause and effect to explain how interactions within them led to current conditions. The vocabulary and conceptual tools of complex adaptive systems, including the concept of emergence, highlight that system features cannot be understood alone through cause and effect analysis but require holistic interpretations.

I begin my journey into holistic inquiry with an assumption that the Kuna story is a good vehicle for analysing development from within, but I hope to escape the extremes of essentialism or becoming a 'doomsayer', by taking a middle path which views change as an

integral part of developing and evolving through a complex web of interactions. Nevertheless, using a systems approach to understanding an indigenous territory creates some unavoidable tensions between having to define a 'system' which is the focus of inquiry, and relating this conceptual system to a real life community setting. I take my lead from 'soft' systems approaches in which complex problems in real life situations are analysed collaboratively by using multiple definitions of the problem as a 'system' (Checkland, 2000). Through a collaborative, critical and reflexive process I build conceptual clarity around the emergent phenomena of Kuna adaptive capacity and endogenous development. In building an understanding of how a process as complex as supporting adaptive capacity is enabled, snap shots of the system become conceptual tools for grappling with real life complexities. These system definitions are inevitably simplified versions of the real life situation, that highlight the most important and informative processes for meaningful and effective action. System definitions are therefore inevitably 'idealised' views of reality, rather than models of the real life processes. The usefulness of this approach is that when the simplified and 'idealised' view of a complex adaptive system is compared to organic development processes in collectives, they can help to identify leverage points to improve the system. To overcome the tension of discussing an 'idealised' system, I dedicate an entire chapter of the thesis (Chapter 5) to describing the reflection group process which enabled conceptual clarity, and illustrates how systems views were developed collectively. Further, throughout the remaining chapters I take care to describe the challenges and weaknesses the Kuna system shows today, thus producing a pragmatic and accurate view of Kuna adaptive capacity.

1.5 Research Questions and Thesis Map

The preceding sections of this chapter have shown that the initial research interest in understanding development from within emerged from reflecting upon my own development praxis and the current context of heightened complexity and global crises. My experience with ongoing Kuna development, managed through community and Comarca processes led to formulation of a research agenda. The central research interest was to build understanding of the underlying processes of adaptive capacity that facilitate endogenous development of the Comarca Kuna Yala. The research interest was formulated into a research agenda to provide opportunity for reflection on how the Kuna story can inform indigenous development practice more generally.

The research agenda was developed with two main objectives:

1) To contribute to a reframing of development through use of a complexity framework;

2) To contribute to an understanding of development processes of indigenous peoples in order to support their self-determination.

This was undertaken by first building a theoretical and conceptual framework through a review of relevant literature. The methodology used was developed by combining systems and action research approaches with a central feature of facilitating a reflexive process of learning during 10 months of field work, combined with in-depth analysis of Kuna practice. The approach has allowed a collaborative, multi-scale analysis of processes and practices that support Kuna adaptive capacity, building conceptual clarity and focusing on three emergent themes of key practices: leadership development, personhood development and ritual practice, and networking. Collective conceptual development and in-depth analysis is synthesised into a holistic interpretation of adaptive capacity and endogenous development. Contributions from the synthesis of learning are highlighted in two ways; theoretical development and reflections for development practice.

1.5.1 Thesis map

The general research steps and how they contributed to the chapters that make up the thesis is illustrated in Figure 1. A major challenge has been using a linear two dimensional form to tell the story of a dynamic research process and building understanding of complex phenomena. The map is an effort to provide clarity and illustrate how the various sections of the story hold together. Note that there are two chapters on methodology and process (Chapters 4 and 5). Chapter 5 tells the story of the reflection process that became the backbone of my approach. Chapters 6, 7 and 8 in turn present analysis of practices that emerged as important through the reflection process and are therefore complementary to Chapter 5. Together, these four chapters feed into a synthesis chapter which presents holistic understanding of whole system phenomena. In the following section, an overview of each chapter provides further details on the research process and outcomes and how they are presented.

Literature Review and Context

1. Introduction
Context
Where I'm coming from
Thesis map

2. Endogenous Development of CAS
Theoretical framing
Inquiry focus

3. Kuna Yala as an IBCS
Historical overview
Local context
Field sites
IBCS reading of Kuna Yala

Methodology and Process

4. Building a Framework for Learning
Methodology
Methods
Research process

5. Guiding a Process of Reflection
Reflection process
Emergent learning
Collective mind maps

Results of in-depth Inquiry and Analysis of Key Practices

6. Adaptive Leadership
Analysis and findings from in-depth inquiry into adaptive leadership

7. Personhood Development
Analysis and findings from in-depth inquiry into personhood development and ritual practice

8. Networking
Analysis and findings from in-depth inquiry into networking practice and governance

Contributions to theory

9. Holistic Understanding
Synthesis of findings on Kuna adaptive capacity, governance and endogenous development and discussion of contributions

Reflections for practice

10. Leverage Points
Highlighting leverage points for Kuna practice and for supporting self-determination of indigenous peoples

11. Conclusions
Reflections of findings for development practice and concluding remarsk

Figure 1 Thesis map

Showing how 11 chapters address the following 5 main sections: literature review and context, methodology and research process, results of in-depth inquiry, contributions to theory and, reflections for practice.

1.5.2 Overview of chapters

Chapter 2 develops a theoretical framework for undertaking analysis into Kuna endogenous development. This is accomplished through first reviewing relevant literature on mainstream approaches to development illustrating their impacts on indigenous development, and then explicating how a complexity and complex adaptive systems (CASs) approach can build alternative models. Once the theoretical framework is developed, the chapter transforms the general research questions into a research agenda, focusing on the cultural practices and social processes that facilitate adaptation for endogenous development. The main areas for theoretical contribution are highlighted.

Chapter 3: this chapter describes the Comarca Kuna Yala. Through a historical overview and descriptions of the Kuna system today, a picture of its dynamic and evolving nature emerges. The research agenda is further developed in this chapter through defining Kuna Yala as an Indigenous Biocultural System (IBCS), synthesizing the CASs approach to a grounded indigenous process.

Chapter 4 is the first of two chapters that set out the research methodology and process involved in this thesis. It also acknowledges my reasons and commitment to collaborative research practice. It begins by developing a methodological framework from the theoretical framework. An integral part of developing the methodology involves ethical considerations which are highlighted. The research process as it was designed and performed is summarised, providing a detailed map of the process throughout the field work period.

Chapter 5 further illustrates the methodology and methods employed to facilitate a process of iterative reflection as the central organising process in the research. Through a description of the reflection process and diagrammatic representation of the conceptual development that occurred, the chapter illustrates how holistic analysis was undertaken and sets up the themes for the following chapters on key practices for Kuna adaptive capacity.

Chapters 6, 7 and **8** present the results and analysis from inquiry into three groups of Kuna practices: leadership development, personhood development and networking. Each of these chapters begins by building a framework for analysis of the particular practice in terms of the focus on adaptation in CASs and concludes with a brief discussion of the main findings.

Chapter 9 looks at Kuna adaptive capacity, governance and endogenous development as a whole. It serves as a synthesis chapter, bringing together all of the threads that have permeated the thesis in an attempt to provide a holistic interpretation of Kuna adaptive

capacity and endogenous development. Through the discussion, the contributions that are made to theoretical development on adaptive capacity, governance and endogenous development are emphasised.

Chapter 10 draws out the main messages that emerge from this research. It focuses on communication of the main research findings for the Kuna and other indigenous peoples. The complexity approach and action research methodology used only allows for tentative insights to be presented in terms of key leverage points for supporting adaptive capacity, endogenous development and self-determination of indigenous peoples. In keeping with the overall approach these insights are framed as suggestions and possibilities rather than as prescriptions.

Chapter 11 concludes the thesis by relating the findings back to the initial concern of the thesis to contribute to the practice of development and presents reflections on where the approach and findings sit within the wide and ever increasing scholarship on the Kuna.

Chapter 2

Endogenous Development and Self-Organisation in Complex Adaptive Systems

We can break beyond the atomistic-mechanistic views of Newton and incorporate the newer understandings about systems uncovered by Western science and new thinking from philosophy which leaves people and their ideas in those systems, abandoning the hope of finding a few universal truths and accepting our own history in the unfolding of reality. We can incorporate wondrous complexities our new science is documenting into the revitalized story. (Norgaard, 1994, p. 189)

2.1 Introduction

This chapter has several objectives. First, it aims to develop a theoretical framework that embodies the assumptions made in undertaking the research, clarifying my understanding of development. My interest is to offer an alternative understanding of development through a theoretical framing that views a local process as central to fostering the self-determination of indigenous peoples within a locality. For this, I first review development theories and practice through history and critique the external project driven approach. Further, I illustrate the need to understand indigenous development processes today as embedded in a globalised and interconnected world. I then use a complex adaptive systems approach to understand the problems of development of human and environmental systems and build my own approach to 'endogenous development'. Complexity calls for a multi-scalar and interdisciplinary approach that focuses on processes and interactions as the drivers of self-organisation and adaptation, leading to my theoretical framework for inquiry into endogenous development.

Second, a research agenda is developed, building on the theoretical framework by reviewing approaches to understanding adaptive capacity as a key characteristic of self-organisation in complex adaptive systems. I show why I take a socio-cultural practice approach to understanding adaptive capacity and self-organisation of Kuna Yala, and how this approach contributes to theory. Finally, the conceptual framework that I use to guide inquiry and analysis is explained diagrammatically, showing how key areas of literature and practices are all linked to my central concern for understanding endogenous development of Kuna Yala.

2.2 Development through Externally Driven Projects

The initial impetus for undertaking this research into building alternative approaches to development was my realisation, through reflection on development practice, of the inability of development viewed as externally driven projects to support the self-determination of indigenous peoples. I begin this review by first addressing how externally driven development has come to be the main manifestation of the 'development apparatus' (Ferguson, 1990). As Rist (2002) argues, definitions of development speak more of what the assumptions behind the need for development are, and the goals to be attained through development, than what development actually is. Accordingly, it is necessary to understand how underlying assumptions of development theories have, throughout history, influenced development practice, and specifically how this has impacted on indigenous peoples and their ability to be self-determining. I do this through discussing development theories and practice, highlighting their main assumptions and criticisms that lead to a need for alternative approaches.

2.2.1 Development as progress

Understanding and influencing societal development has, throughout history, interested all societies and cultures. For the purpose of this review, I begin with the first development theories that significantly impacted on indigenous peoples, emerging from ideas of progress and modernity in Europe between the 16th and 19th century. This period is known as the Enlightenment, during which there was a search for a new cultural synthesis of freedom and progress to replace the 'darkness' and 'superstition' of the Middle Ages (Edelman, 2004). It is often claimed that modernity began in the Enlightenment (Barnett, 2004). As some scholars point out, the period was not one of linear development of ideas but rather was a dialectical movement between diverse and complex ideas and social processes (Baker & Reill, 2001; Edelman, 2004). The new cultural synthesis that emerged from the period produced an approach to development as modernity attainable through progress (Larrain, 1989; Munck & O'Hearn, 1999).

   Intertwined within the historical emergence of modernity and its philosophical tendencies is the history of the natural sciences. The great thinkers of the Scientific Revolution of the 17th century reflected on the aims and methods of science, to build a new scientific paradigm. Francis Bacon theorised about inductive methodologies, while Descartes used deductive reasoning to produce the reductionist methodology (Checkland, 1984). Newton added principles of experimentation, demolishing the Aristotelian view of ideas as inseparable from

their embodiment in objects (Singer, 1959). Underlying these methodological developments was the separation of mind and matter, and the scientific method as applicable to a mechanistic world, allowing rationality of humans to control nature through science (Rist, 2002).

Other important changes during the period were propelled by economic theories. It was Adam Smith, through his *Wealth of Nations* (1776), published during the Scottish Enlightenment, who echoed the scientific approach of using first principles for understanding complexity of economic and social systems (Preston, 1996). Industrial capitalism used Smith's ideas of technical innovation, driving division of labour. The evolution of society was seen as a linear and deterministic process (Cowen & Shenton, 1996). Coupled to the social evolutionist approach of the 19th century, with Jean-Baptiste Say and August Comte arguing that all societies go through a progressive process of evolution, it was reasoned that Western nations were leading the way and the rest of the world followed behind them (Rist, 2002). The Eurocentric model of development was born out of the historical combination of rationalist thought, reductionist methods, evolution of societies understood as linear and, progress attainable through labour in capitalist markets.

Colonisation framed the interaction between Europeans (primarily the elite) and indigenous peoples in other parts of the world. While there is no disputing that colonisation permitted the exportation of the European project of progress and development to the rest of the world, it is a matter of perspective whether assumptions of progress are thought to have been used to *justify* acts of genocide, slavery and exploitation of other peoples, or the subjugating acts were undesired and unplanned side effects of imperialism at a time when development was understood as a linear progressive endeavour. Indigenous peoples, who suffered under colonial rule, argue that scientific knowledge and rational thought were purposely employed as tools of subjugation during colonisation (Battiste, 2000; L. T. Smith, 1999). Some indigenous knowledge scholars extend the argument to claim that it continues to be used in postcolonial times to marginalise them (Mehmet, 1999; Posey, 2000; Stonich, 2001). These arguments are embedded in ongoing processes of decolonisation of knowledge and governance, and therefore must be understood as such. The important point here is that a Eurocentric model of development, which has marginalised indigenous peoples, was fuelled by assumptions of indigenous knowledge and ways of being as irrelevant or as opposing the natural progress of societies. Accordingly, it was reasoned that attaining progress requires externally driven initiatives to be brought to indigenous peoples.

The imperialist and colonial development strategies that continued to use theories of development as progress, have now given way to what has become the 'development industry'. The Bretton Woods Conference in 1944 was pivotal, marking the birth of the aid industry through the establishment of the first multilateral agencies (Rist, 2002). Planned development theories stemming from the WWII era, echo the Enlightenment discourse and capitalist notions of economic growth. Eurocentric development brought together modernisation and industrialisation (Preston, 1996). It assumes that progress equals economic growth which necessarily involves technological sophistication, urbanisation and high levels of consumption. Further, it argues for modernisation as the process through which less developed countries would be moved from traditional ways of life into more modern ways. This mainstream approach to development has also been called Westernisation, the aim of which is "to reconstruct the rest of the world on Western norms and institutions" (Mehmet, 1999, p. 2). The notion of 'underdeveloped' areas of the world is therefore a product of a historical discourse of development born in the West (Escobar, 1994). The role of multilateral agencies and development organisations that make up the 'development apparatus', is to help the underdeveloped through planning and executing projects (Ferguson, 1990).

Eurocentric development necessarily relies on a dichotomy of 'traditional' versus 'modern' (Tucker, 1999) and has led to the dichotomy of traditional/local/indigenous knowledge versus scientific/western/global knowledge (Agrawal, 1995). Further, the idea of development as an externally driven process has enabled unequal power relations to reduce indigenous peoples to passive objects. As knowledge is socially constructed and thus inextricably linked to power (Foucault, 1972, 1980; Hindess, 1996), the assumptions of Eurocentric development continue to marginalise indigenous peoples and their knowledge. They have not, however, remained unchallenged. In the following section I discuss how these challenges have created some space for the local to participate in development projects, but continue to struggle to overcome their externally driven nature.

2.2.2 Creating space for the 'local' in development

An early challenge of Eurocentric development came in the form of dependency theory, which emerged out of the effect of the 1930s depression on Latin American countries, whose economies depended on export markets, and challenged Eurocentric development. It was influenced by Marxist concepts of inherent inequality in capitalism and understands underdevelopment as rooted in political structures and power relations (Preston, 1996). Dependency theory explained development from the 'logic of capital' (Ferguson, 1990) so in

spite of being critical of modernisation theory from a Eurocentric perspective, it remained modernist and did not consider the effect it was having on particular segments of the population such as indigenous peoples (Manzo, 1991; Tucker, 1999). This challenge of Eurocentric development was unable to show that development as an externally driven project struggles to support local processes of development.

A more fruitful challenge of the assumptions underlying externally driven development models has come from participatory development models. The main opportunity participation provides is for the voice of the local to be heard in planning and conducting development projects (Altieri & Masera, 1993; Chambers, 1983). Such 'bottom-up' approaches to development advocate development for the poor by the poor, and are often coupled to a livelihoods approach (de Haan & Zoomers, 2005; Scoones, 1998). They are critical of modernity, and intellectually challenge theories of progress and belief in rationality (K. Gardner & Lewis, 1996). A growing awareness of the relationship between discourse and power (Foucault, 1980) has supported participatory approaches by deconstructing discourse to recognise the voice of the local. Underlying many participatory approaches is a goal of emancipation. Emancipatory development emerged from the work of Neo-Marxist scholars such as Paulo Freire (1986; 1998; 2004) who argued for empowerment and liberation education as central to the process of development of the marginalised. His emancipatory education is based on transformation that occurs within individuals and, when coupled with dialogue, can drive social change. Emancipatory and participatory developments models have significantly influenced development practice in Latin America.

In practical terms, participatory development has produced tools to facilitate stakeholder involvement and management of the processes of development locally (Chambers, 1994a, 1994b, 1997). These tools are now widely used in development practice illustrating acceptance of the participation discourse by development agencies (Bhatnagar & Williams, 1992; Blair, 2000). While in theory this shift to a more 'bottom-up' and locally managed approach should be able to address the needs of the most vulnerable through visualising the local community processes, breaking away from development seen as progress and externally driven, it has struggled to fulfil its promise. Robert Chambers (1997), one of the major proponents of participatory approaches, argues that the extent to which participation leads to empowerment and transformation varies, depending on the depth of application of participatory methods. This practice-based criticism assumes the failure to lie in its application. More discouraging criticism has led to participation being called the 'new

tyranny' (Cooke & Kothari, 2001), or being labelled mere rhetoric (Poolman & Van De Giesen, 2006; Zanetell & Knuth, 2004).

Participatory approaches tend to homogenise the 'local' (Byrne, 1995; Goebel, 1998), so in spite of their intentions to challenge assumptions of externally driven development, they tend to reinforce a dichotomous view of 'us' versus 'them'. Local or indigenous knowledge is often regarded as an adequate adversary of western knowledge by participatory approaches. By failing to address the underlying power relations they perpetuate the debate about the 'right' or 'wrong' reified knowledge necessary for the process of development and reinforce a dichotomy of top-down versus bottom-up development (Kapoor, 2002; Mohan, 2006). The debate reduces indigenous knowledge to a mere resource of development (Blaikie et al., 1997), albeit with the best intentions of using it for the empowerment of marginalised peoples. Participatory development has, in general, supported the dichotomous views on which externally driven project based development is built. Instead of challenging the primacy of projects, they focus on development and use of practical tools that support bottom-up project based development.

As Crewe and Harrison (1998) argue, the 'gap between promise and practice' of development is more accurately analysed through a conceptualisation of development as a process that creates shared meanings, where dichotomies give way to permeable relationships between ill defined spaces. By focusing on the process through which development is enacted, one sees beyond dichotomies of knowledge types and project based interventions, providing space for indigenous knowledge and approaches to become important players of local development. Hybridisation and synergy is one approach to knowledge creation that emphasizes working towards solutions in development, rather than reinforcing a dichotomy (Berkes, 1998; Blaikie et al., 1997; Ellen, Parkes, & Bicker, 2000; Maurial, 1999). Siebers (2004) describes a process of creolisation as "the selective adoption and adaptation of meanings and practices that stem from their [indigenous communities'] own sources on the one hand and from global flows that reach them through development agencies on the other" (p. 42 brackets added). Creolization is used to decide which bit of technological or indigenous knowledge is most appropriate to solve a practical development problem, and can lead to a rejection of local knowledge in favour of a new technology or vice versa. Implicit in this argument is recognition of the importance of a local process of adapting knowledge to the context. These more fluid approaches to understanding the workings of development lead to a focus on the process through which development occurs locally as the key driver of self-determination. They enable a move beyond critique of certain types of development

interventions, such as bottom-up or top-down to view relationships and networks that support local well-being.

An indigenous position on knowledge, as provided in the introduction to a recent special issue of *Futures* journal on indigenous knowledge (Turnbull, 2009), provides a focus on development as a process rooted in the local. Four points are made about its nature: (a) it is a collective knowledge that is the foundation of the culture and emerges from daily interaction with ancestral territories, (b) its protection and development cannot be separated from the right to maintain the physical and spiritual relationship with territories, (c) customary laws define how knowledge is shared, used and applied, (d) customary laws also govern the spiritual and material relationship with territories and the biodiversity they house. This position illustrates a view of indigenous knowledge systems functioning as holistic systems of culture, society and environment. A particular way of being in the world emerges from the local interactions of people and environment. It allows development to be viewed as a local process that is managed through a particular system of knowledge creation, use and management. Rather than a focus on the type of knowledge, it emphasizes a process through which a locally rooted people can support their self-determination. Through this research I intend to illustrate theoretical and practical avenues for using development models that are coherent with this indigenous view.

Thus far, I have argued that in spite of participatory and emancipatory approaches to development providing opportunity for recognising the role of indigenous peoples and their knowledge in development, they have been unable, in practice, to look beyond externally driven development projects to support locally managed processes. It is true that the distinction between an insider and an outsider can be blurred (Crewe & Harrison, 1998), but the main impetus, funding and models used in mainstream development continue to be largely provided by institutions and individuals located outside of the locality of the interventions. The continued use of tools such as participatory rural appraisal that use Western models of literacy and cognition (Mosse, 1994; Richards, 1995) and agents of change (who may be locals) that work through development projects, more often than not, end up undermining the self-determination of communities (Rahnema, 1990). Participatory approaches speak of 'partners' rather than 'beneficiaries', but the fact remains that they are communities that have a locality and a context of their own, and only through being cognizant of the local processes and context can development interventions hope to be helpful. In the following section, I situate a focus on local processes of development for self-determination of indigenous peoples

within the current context of globalisation, leading to further theoretical development that underpins my approach.

2.2.3 Local development in a globalised world

Self-determination of indigenous peoples today emerges from a locality which is situated in an interconnected world. In a globalised world, geographical and temporal scales are highly interconnected (Robertson, 1995). The local today is no longer an isolated part of the world, reached by colonising forces from afar. Indeed, development has never been a process of entirely disconnected 'others' influencing the local. Taking a fluid approach to development as a process through which hybrid realities emerge, however, does not deny that the self-determination of indigenous peoples emerges from a locality. As Raffles (2002) argues, indigenous knowledge emerges through the embodied and situated practice of life which happens within a locality. The particular relationship of indigenous peoples to territory, and their holistic appreciation for people within nature, further illustrates the importance of locality for self-determination. As I will illustrate further in Chapter 3, in the case of the Kuna, territorial autonomy is a platform from which development emerges, providing a boundary which, although permeable, is the conceptual and practical structure within which collectivity is understood and managed. Globalisation does not mean that we no longer need to understand the local in development, but, rather, that we need to understand it as interconnected with the rest of the world. The major challenges and tensions that local development faces today, and this thesis speaks to, are born of this interconnected nature of processes and practices.

An interconnected approach to the world is now enabling our understanding of emergent global phenomena, such as climate change (Richardson et al., 2009) and unprecedented environmental degradation (UNEP, 2009). For indigenous peoples, who depend on natural resources for their livelihoods and way of life, emergent global change patterns have very particular local impacts on ecosystems and livelihoods. Indigenous peoples are on the front lines of climate change, facing impacts that are leading to relocation of entire communities (GHF, 2009). Climate change is an example of a complex global-local problem which must be responded to through an approach that enables guidance by local development processes which support self-determination. Emergent debates around 'climate justice' are an indication of the difficult nature of responding to challenges of globalisation in a way that does not create more impacts on marginalised peoples (Adger, Paavola, Huq, & Mace, 2006). Further,

responses must consider the importance of human-environment relations for cultural survival and livelihoods. A focus on a local development process in this current context, therefore, must consider the interconnected nature of the local and the global, as well as the intricate link between human and environment systems.

Acknowledging a relationship between environment and development has enabled theorising and practice that is useful in building a more interconnected view of people within nature, and how they relate across scales and time frames. In the last 30 years, the concept of sustainable development has permeated development theorising and practice. Initially it linked the maintenance of ecological processes and life-support systems to the sustainable utilization of resources (IUCN, 1980). It has since contributed to development discourse by identifying a relationship between services of natural resources and human exploitation of them. The Brundtland Commission definition of sustainable development as ″development that meets the needs of the present without compromising the ability of future generations to meet their own needs″ (Brundtland, 1987) is still the most commonly used definition, and outlines the objective of sustainable development in terms of meeting needs while safeguarding future viability on the planet.

Much like other development approaches, sustainable development has struggled to deal with the political and economic forces behind mainstream development (Redclift, 1987). Critics of sustainable development argue that it is too vague a concept for practical application, it is an oxymoron and cannot practically reconcile the contradiction between development and sustainability, and it distracts from the need to deal with deeper issues (Rammel, 2005; John Robinson, 2004). Not withstanding these criticisms, the environmental focus of sustainable development provides a more interconnected view of the world (Harris, 2007). Since its uptake and promotion through key international events such as the UN Conference on the Environment and Development held in Rio de Janeiro in 1992, sustainable development has been widely accepted by most development agencies and is used to promote an environmental agenda in development interventions (Atkinson, Dietz, & Neumayer, 2007). The result has been a plethora of different approaches to sustainable development (e.g. Merbatu, 1998; Pezzoli, 1997). Two aspects of this theorising are useful for building a more interconnected view of the world: (i) a focus on meeting needs and how they are defined can help support local processes, and (ii) an inter-generational and cross-scale approach can help support interconnections.

One recent attempt at theoretically addressing multiple scales of time and space for environmental sustainability is the development of a framework for dealing with the multiple

scales associated with sustainable development needs and processes. This model, developed by Morrison and Singh (2009), identifies 1st and 2nd order development goals. Based on Fischer-Kowalski and Weisz's (1999) model of interactions between society and nature, they define 1st order goals as related to biophysical processes and 2nd order goals as related to cultural and symbolic processes. The goals related to cultural and symbolic processes (2nd order goals) correlate with needs identified in attempts to build indicators for sustainability, such as universal human needs as described by Bossel (1999; 2000) and Max-Neef (1992). The needs they identify include subsistence, freedom of action, security, participation and adaptability. Accordingly, what is required for sustainability is to identify and meet both goals that relate to cultural and symbolic realms and goals that meet bio-physical and environmental realms. However, in order for such theoretical models to be useful in supporting local self-determination, a further step is required, they must be defined locally (Reed, Fraser, & Dougill, 2006).

Some theorising in sustainable development, therefore, is useful as it illustrates that a process of defining needs locally, based on local cultural and symbolic models, must be coupled to an appreciation of the biophysical constraints within which a community must develop. While some are now calling for the redefinition of well-being to include the relationship of people within nature as important for redesigning governance (Beddoe et al., 2009), they do not necessarily promote local and culturally specific definitions of well-being. What I have argued here is that certain theories of sustainable development provide an opportunity for addressing cross-scale interactions and the relationship between society and nature. When these are combined with locally defined needs they can potentially support well-being and self-determination. This theorising is seen as useful to my interest of understanding local development within an interconnected world.

Summary of Section 2.2

In this section I have first discussed how underlying assumptions of development born out of the Enlightenment in Europe has led to the creation of a development industry that engages in externally driven project based development aiming to bring progress and modernisation to indigenous peoples. The consequence is continued marginalisation and creation of dichotomous views of local versus other knowledge. Criticism of this form of planned and externally driven development has come from many directions, leading to a plethora of alternative approaches and paradigmatic positions (Schuurman, 2000). Specifically, I argued that while participatory and emancipatory approaches have created new spaces for

participation of local and indigenous peoples in development, they continue to use externally driven project based interventions and reinforce dichotomous views of top-down and bottom-up development. This leads to my argument that alternative models of development are necessary to support indigenous self-determination. Alternative models must recognise the importance of a local process as the vehicle for managing development, an approach that emerges from an indigenous view of self-determination and is intricately related to locality and territory. Simultaneously, they must be aware of the fluidity of local-global links and processes that influence development practice. I showed that some emerging approaches to sustainable development can be helpful in addressing the interconnected nature of the world and the unprecedented environment challenges of the current age of heightened complexity. I now begin building my own approach to development, which I used to guide inquiry into the Kuna development process.

2.3 Endogenous Development of Complex Adaptive Systems

In order to support the self-determination of indigenous peoples, there is a need to reconceptualise development as a locally grounded and managed process. A local focus on development has led to some theorists and practitioners using an 'endogenous development' approach. I will first introduce this approach, and then develop my own version of it through illustrating the contributions that a complex adaptive systems (CASs) lens brings to my inquiry into the Kuna development process.

The concept of endogenous development has been used to develop socio-economic development projects in rural areas (High & Nemes, 2007; Ray, 1999a). The approach has three main characteristics: it is territorially focused; it uses local resources; and it requires public participation (Ray, 1999b). It has been used to revalorise territoriality and traditional culture within a modern setting (Jenkins, 2000). The LEADER program uses the approach to support development in marginalised rural areas of Europe. Reported outcomes of its application include an increase in social capital formulation and inclusion of marginalised sectors (Remmers, 1996; Shucksmith, 2000).

A similar application of the concept can be found in the work of the COMPAS international network for supporting endogenous development (Haverkort, Hoof, & Hiemstra, 2003). Endogenous development is defined as "a development based mainly, but not exclusively on locally available resources, such as land, water, vegetation, local knowledge, as well as values and preferences of local people.… Endogenous development is an approach

that takes place complementary to the ongoing global processes, and can thus be seen as an effort to bring together global and local knowledges." (Haverkort et al., 2003, p. 27). COMPAS' work with indigenous peoples highlights that endogenous development emerges out of local knowledge systems, with cultural and cosmological frameworks as central to the process. Endogenous development has therefore been employed to describe the local process which I argue is the vehicle for self-determination of indigenous peoples.

As I have already outlined, this local process is occurring today within the context of heightened complexity which is the product of a globalised and interconnected world. Endogenous development therefore must be couched within a broader approach that recognises the interconnected nature of the world which produces emergent phenomena of concern to indigenous peoples, such as climate change. The growing field of complex adaptive systems (CASs) which is unfolding within multiple disciplines is beginning to illustrate new, fruitful avenues for understanding emergent phenomena in systems, and the dynamics that produce them. It is a field that has grown out of critique of reductionist and mechanistic thinking. The biologist von Bertalanffly was the first to propose that systems thinking in general was a way of thinking that can be used to analyse all wholes (Checkland, 1984; Garnsey & McGlade, 2006), and it has proved fruitful in the attempt to understand problems that are characterised by high levels of complexity, where reduction on its own is inadequate. The problems that concern endogenous development are complex because they are characterised by multiple stakeholders and require multiple knowledge types. They cannot be analysed through simple reduction of the problem into constituent parts, and are necessarily couched in a network of interactions across scales. Research into the process of endogenous development therefore is a prime candidate for application of a CASs or complexity lens.

Complexity theory and a CASs framework has been applied in various related disciplines and problem areas, such as in sociology (Eve, Horsfall, & Lee, 1997), socio-economic analysis (Garnsey & McGlade, 2006), theories of globalisation (Urry, 2003) and, sustainable development (Harris, 2007). The study of CASs focuses on the general attributes of evolutionary natural and social systems that exhibit non-linear dynamics. As an emergent and multi-disciplinary endeavour, using the approach requires one to first identify the key feature of CASs that are relevant to one's application of it (Byrne, 1998; Cilliers, 1998; Garnsey & McGlade, 2006; Harris, 2007; Manson, 2001). In the following section I offer my own synthesis of characteristics of CASs that are relevant to developing my approach to understanding endogenous development of human and environment systems.

2.3.1 Characteristics of Complex Adaptive Systems (CASs)

The following discussion of CASs is based on research that led to an understanding of their dynamics (DeAngelis, Post, & Travis, 1986; Gould, 2007; Holden, 1986; Holland, 1999; Kauffman, 1996; Lorenz, 1963; Prirogine & Stengers, 1985) combined with literature that is concerned with the application of the science of complexity (Byrne, 1998; Cilliers, 1998; Garnsey & McGlade, 2006; Gleick, 1987; Harris, 2007; Waldrop, 1992). Its purpose is not to provide an exhaustive description of complex adaptive systems theory but rather to illustrate the use of a CASs framework in the analysis of development of human and environmental systems, to support inquiry into endogenous development. The key characteristics described are interrelated, and therefore a certain amount of repetition in the following sections is inevitable.

CASs are open systems with multiple interacting parts

One of the assumptions of the common approach to complex problems that arose out of positivist science is that breaking it down into its constituent parts and analysing each part separately will lead to understanding of the whole. The 'complex problem', translated into systems language, is viewed as a complicated system that can only be understood through its parts. A complex system, on the other hand, has interconnected parts that affect each other in ways that cannot be defined by universal laws. A change in one part of the system can create a cascade of effects over the entire system, or it may only influence its close neighbours. This behaviour of complex systems is known as non-linearity. In other words, the way one part affects another is unpredictable, and is not always proportional to the strength of the signal it sends.

Further, complex systems do not have clear or impermeable boundaries; complex systems are open systems. At first glance most living systems seem like closed systems. A community, for example might at first appear to have clearly defined territorial, political and social boundaries. But every community depends upon constant interaction with its environment. Material and knowledge flow between communities and the environment such as a region or nation state they are embedded in. If they are viewed as closed systems, incorrectly, then one is blind to the level and type of interaction that occurs between them, their parts and their environment. This is of particular concern when discussing the development of a group, community, or society. The interactions, and whether they are reinforcing or correcting in nature, can cause an intervention (internally or externally driven)

to have unintended consequences. The end result could be to undermine its initial aim and render the intervention useless, or make the initial situation worse rather than better.

Complex systems are unpredictable, due to their non-linear interactions between their multiple parts and the external environment. For this reason some call complexity theory a new paradigm shift in the sciences (Kauffman, 1996; Waldrop, 1992). The implications of viewing communities as CASs which are unpredictable are manifold. Glouberman and Zimmerman (2002) illustrate the difference between managing a complicated problem and a complex problem with an example; sending a rocket to the moon is a complicated problem while raising a child is a complex problem. Sending a rocket to the moon requires many specialised teams and is not a simple process, but rockets are engineered and built, and if we can send one to the moon it is likely we can repeat it. Raising a child, on the other hand, can benefit from expertise, but each child is unique, and there are no guarantees of success, even when we have much experience at it. The problems of endogenous development are complex in the same way that raising a child is. Some aspects can be helped by expertise in certain fields, such as technical knowledge to build a new aqueduct. Self-determination of a community, however, is much more than dealing with particular problems with expertise. It requires an on-going process, through which a system evolves and changes. This ongoing process cannot be controlled but rather must be nurtured. This does not, however, mean that development of social or environmental systems cannot be influenced by our actions, but rather, that a natural or organic process of interactions is continually occurring beyond our interventions. The challenge of dealing with complexity is related to an often subtle difference between facilitating and controlling a process of development, and our awareness of ongoing organic development.

Far from equilibrium dynamics and self-organisation

In studying chemical systems and building on theories of thermodynamics, Prirogine (1985) coined the term 'dissipative systems'. They are open systems that operate in a state far from equilibrium. They require a flow of energy into them to sustain their dynamics (and this is possible because they are open). Living systems therefore are not in a state of equilibrium, but oscillate between alternate states that resemble equilibrium states. In trying to understand how the system moves from one state to another, it was found that open systems reach critical states. A critical state is reached only after a multitude of ongoing interactions and feedbacks within the system create small changes that combine to lead the system to the critical state. When it is reached, and thresholds of certain parts are exceeded, the system ends up at a point

of bifurcation. At this point a division in the path occurs, and the system can enter either path, changing the system in different ways. The bifurcation process creates a major change in the qualitative aspect of the system. This essentially means nothing ever remains the same in complex systems, but rather, that they are continuously changing.

Catastrophe theory has also been used to describe the sort of catastrophic qualitative changes that might occur through bifurcation of a system and is often used to describe social system collapses. Another similar concept used in the description of social system dynamics is path dependence, emphasizing that as complex systems, social systems are contingent on historical processes, and it is the sum of these that bring the system to where it is at any point, including a bifurcation point. Catastrophe theory and path dependence each focus on one part of the overall dynamics of complex systems. Path dependence explains that a series of small changes all lead the system to a critical point, and, catastrophe theory describes that after the bifurcation point is reached, the consequences may be catastrophic. Employed individually they tell only one part of the story, and although this might be useful to explain certain moments and dynamics of a system, when viewed together, the dynamics of evolving systems are better understood.

Much of the understanding regarding the far from equilibrium dynamics of complex systems has come from visualising the movement they go through. The surprising realisation that complex systems do not produce random disorderly images, but rather show a form of order has drastically changed the way dynamics in living systems are understood. These images are described as showing strange attractors, a value towards which the system variables move over time, which explain how bifurcation in complex systems leads to neither linear nor indeterminate images, but rather to a form of order. This has been called deterministic chaos, because it is not a truly chaotic system but rather one that leads to order. Thus out of chaos, bifurcation and strange attractors a new form of order occurs in the world, an organic order that emerges out of self-organisation of complex systems. Self-determination of indigenous peoples can be thought of as a process of self-organisation, occurring through oscillations and constant change as communities display far from equilibrium dynamics.

Emergence and adaptation

The concept of 'emergence' is central to understanding the implications of shifting from complicated models to complex models. An emergent phenomenon in CASs and the way I use the term here refers to phenomena of living systems exhibiting a behaviour or characteristic that is unable to be foreseen from an analysis of its parts. Kauffman (1996)

argues that life is best understood as an emergent property of evolution. Gradualist assumptions in evolutionary theory have been challenged by theories of punctuated equilibria (Gould, 2007). Data from millions of years ago show periods in which some species persisted with minor changes over long periods of time, hinting that the linear progressive process of natural selection might not be the whole story. While the validity and significance of punctuated equilibria is contested, (e.g. Dennett, 1995), a complexity view holds that evolution occurs through adaptation as a response to feedback loops between interacting individuals and species, leading to self-organisation. Adaptation is therefore a key process within a co-evolutionary understanding of complex living systems.

The term 'edge of chaos' was coined by Kauffman (1996) to describe the far from equilibrium state of complex systems through which order emerges. When the world and its systems are viewed as perched on the 'edge of chaos' a new understanding of how to affect system changes is born. As Kauffman (1996, p. 29) puts it, "In such a poised world, we must give up the pretence of long-term prediction. We cannot know the true consequences of our best actions. All we players can do is be locally wise, not globally wise." A distinction has been made by Clark (1997, pp. 73-76) between two forms of emergence. The first is 'indirect emergence', and it "relies on the interactions of individual elements but requires that these interactions be mediated by active and often quite complex environmental structures" (pp. 73-74). The second form is called 'direct emergence' and it "relies largely on the properties of (and relations between) the individual elements" (p. 73). The distinction is subtle, but it is profound for our understanding of how human systems may influence complex interactions. Articulation of the concept of 'indirect emergence' points to a role for mediation and human agency in complex dynamics and emergent patterns. This does not suggest that humans can 'control' self-organisation and emergence, but rather, that they are able, to a certain extent, to influence it. However, while the two forms of emergence are conceptually separate, in reality they are joined. 'Direct emergence' is always behind 'indirect emergence' so that the two are meshed within complex system dynamics. 'Management' of complex systems therefore is improved by an awareness of spontaneous direct emergence as meshed with conscious directed emergence.

The implication of emergence and self-organisation is highly relevant to understanding endogenous development. First, in an embedded complex system, for example the Kuna territory, in which families exist within communities which exist within the whole region, it is the interactions of the parts of each level (subsystems) that enable emergent properties at a higher level. Individual people interact in a particular way to form a family, these in turn

interact to form a community. If community is seen as an emergent property of lower level interactions, then it changes the approach we must take to understanding it and deciding how best to influence it. Influencing a community from the outside requires an awareness of the internal processes which constitute it. Development interventions can only hope to support community if they become incorporated into internal processes. External forces can influence internal processes of self-organisation, or even threaten the viability of the system, for example a law change in Panama could undermine Kuna autonomy. The important point here is that while the environment can influence a community, the environment cannot create a community; community is only authentic and organic when it emerges out of self-organising processes between its members. Endogenous development must therefore be conceptualised as an organic process (albeit one that can be influenced) that can support authentic community and self-determination.

A second implication of the concept of emergence concerns appropriate language. In an embedded world of complex systems, the language of each level differs, because of the properties emerging out of lower level interactions. While psychology and sociology provide theories and language for making sense of interactions between people, talking about communities interacting within a regional system requires theories of governance and politics which may require different language and conceptual framings. This point is significant for methodological implications of studying a complex system that is made up of embedded subsystems. While still a challenge, a need for interdisciplinary inquiry is a major contribution of a CASs to analysing real world situations. Further, a tension arises out of the need to understand the subsystem interactions and using the correct language for this, while acknowledging that the system is open, and not losing sight of how the system is also affected by its environment. Different levels must be viewed at the same time, but require different methods and language. The challenge that this poses for using a complexity approach in general and in particular for this research will be further discussed in Chapter 4 on methodological implications of the chosen framework. At this stage, the important point to be made is that a CASs approach to endogenous development necessarily requires a multi-scale and interdisciplinary framework to appreciate the phenomenon of emergence.

In this section on the characteristics of CASs, I have described them as open, living systems, made up of many parts that interact in non-linear ways. They adapt and oscillate between states so exhibit far from equilibrium dynamics, with patterns and order emerging out of interactions. Their unpredictability and their dynamic perching at the edge of chaos calls for a holistic appreciation, requiring approaches that focus on processes of interactions

and the patterns that emerges from them. Further, appreciation for both organic processes of change and adaptation and human mediated changes illustrate the challenge that managing such complex systems entails. Now, I will use this understanding of complex problems and complex human and environmental systems to develop an alternative approach to understanding endogenous development.

2.3.2 Development on the edge of chaos

Complexity has been used in several recent examples of development analysis. One notable example is Rihani's (2002) *Complex System's Theory and Development Practice.* The following quote from the introduction sums up the approach argued for:

> Within a Complex regime, some global patterns are predictable, but in the main, useful interventions are restricted to enabling interactions to proceed in a manner that produces self-organised stable patterns in preference to either order or chaos. Local freedom of action, learning, flexibility and variety are vitally important, as control is limited to observation of outputs and encouragement for the elements to interact in a way that moves the system towards desirable ends. (Rihani, 2002, p. 9).

While the analysis focuses mainly on economic development, it is coherent with my endogenous development approach. A similar model is used by Garnsey and McGlade (2006) in analysing socio-economic systems as CASs. It leads to the focus on complex micro-macro interactions of socio-economic systems that give way to emergent properties. In the same edited volume, one contribution uses complexity to look at capitalism and argues it is best viewed as a knowledge system (Ramlogan & Metcalfe, 2006). In this 'restless capitalist' model, order emerges from the continuous dynamic innovation and adaptation of the knowledge system, and entrepreneurs hold an important place as innovators. These examples begin to illustrate that a CASs approach to development of a community and/or a coupled human and environmental system uncovers the deeply paradoxical nature of complex systems. Rammel (2005) looks more specifically at the paradox of sustainable development - having to balance innovative change and conservation - and uses a CASs approach to transform the paradox into an opportunity for overcoming the tension between change and conservation.

Development practice understood through complexity becomes a delicate balancing act for fostering emergent order. Management of CASs can only hope to nurture self-organisation, without being able to directly control it. diZerega (2000) provides an insightful application of complexity to understanding societal democratic processes that illustrates this point well. Through use of Hayek's (1967) notion of 'spontaneous orders', diZerega (2000, pp. 168-175)

argues that there are different degrees of self-organisation in social systems. Instrumental organisations have specific goals, for example government institutions. Human relations within them are structured based on organisational goals which he calls weakly self-organising. Strong self-organising systems, on the other hand, are egalitarian systems and individuals are all free to act within them. Society or community is such a strongly sel-organising system and produces 'spontaneous order'. Both types of systems exist, and both are fundamental for societal processes. Strong self-organising systems, however, are better suited to dealing with complexity and unpredictability, so spontaneous orders are advantageous for social systems. The difficulty is that they cannot be 'constructed' but only nurtured.

Recognising that development is occurring through a combination of spontaneous emergent patterns of order (what Clark (1997) calls 'direct emergence') and goal seeking behaviour of social structured institutions requires a delicate balance between the two. Human intervention or facilitation of development can produce environmental conditions that support 'indirect emergence' but cannot control the process. This delicate balance and paradoxical nature of CASs will be repeatedly mentioned throughout the rest of the thesis, when different aspects of supporting adaptive capacity which lead to 'managing' complexity, change and self-organisation are discussed.

2.3.3 An appropriate endogenous development approach

My intention in the preceding sections was to illustrate that a CASs view of living systems (such as communities and ecosystems) can help further an endogenous development approach to understand how self-determination of indigenous peoples is fostered through self-organisation within a locality. One of the challenges outlined in Section 2.2.4 is the need to understand a local process of endogenous development as couched within wider processes of development across scales of time and space, considering human-nature interactions. The cross-scale approach of a CAS that recognises each subsystem to be an open system has led some to argue for it as useful for sustainability science (Norberg & Cumming, 2008). It creates a framework that illustrates how development goals can be addressed to deal with the tensions of sustainability across time and space. Local endogenous development informed by a complexity approach begins to illustrate how sustainable development can be achieved linking across-scales, ensuring that both biophysical (1st order) and cultural (2nd order) goals (Morrison & Singh, 2009) take into account immediate and long term needs.

The long term view of development that is necessary for managing interactions between human and environmental systems in a sustainable manner also fits well with a co-evolutionary interpretation of the evolution of living complex systems. Norgaard's (1994) co-evolutionary development, recognises the new science of complexity, and argues for the re-conceptualisation of development through a co-evolutionary framework. The process of co-evolution, is said to produce "a patchwork of loosely interconnected, coevolving social and ecological systems" (Norgaard, 1994, p. 90). The shift from viewing the world as made up of mechanical systems to one of mutually interacting or co-evolving systems (Norgaard, 1988) demonstrates that complexity emphasizes processes facilitating interactions across-scales. The underlying framework "emphasizes the beauty of participating in and sustaining a coevolutionary unfolding" (Norgaard, 1994, p. 189), which occurs locally.

Application of a CASs approach to this inquiry into processes that support self-determination of indigenous peoples leads to a particular conceptualisation of endogenous development, illustrated in Figure 2. The focus of this study is on the local processes that sit within embedded spheres, moving out through time and space. Being aware of the underlying co-evolutionary relationship between human and environmental systems produces a focus on the process of participating in and sustaining co-evolutionary relationships.
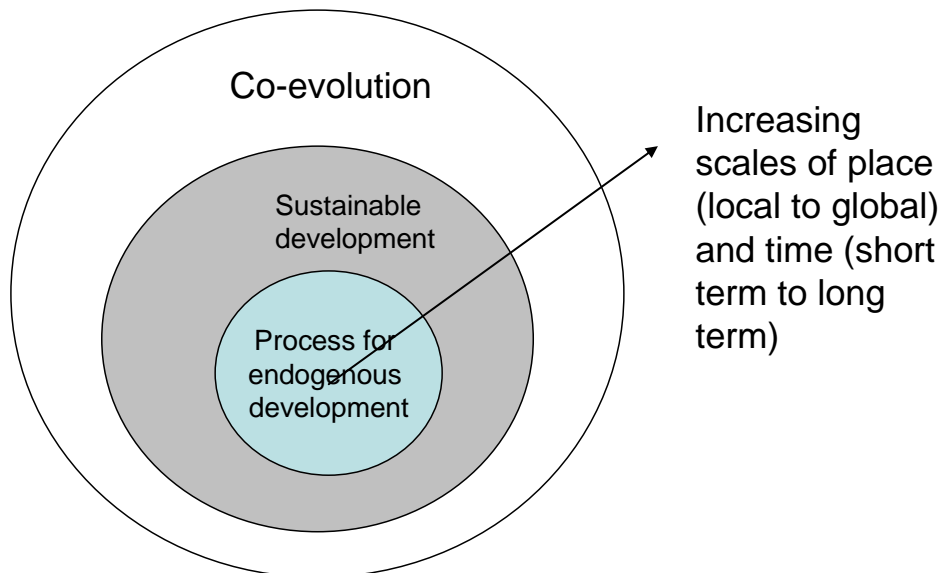
Figure 2 Theoretical framework of endogenous development

Endogenous development is understood as a local process that sits within a wider process of sustainable development that occurs across-scales. Sustainable development in turn is embedded within co-evolutionary interactions that underpin the evolution of ecosystems and culture.

2.4 Inquiry into Adaptive Capacity

In the previous section I developed a theoretical framework to focus inquiry on endogenous development (Figure 2). The complexity paradigm offers a 'conceptual cluster' (Newell et al., 2005), from which lower level concepts are used to specify inquiry. In this section, I define the scope of this research further, identifying the lower level concepts that I will use to create a coherent research agenda, explaining how it contributes to theoretical development.

Two key features of CASs is their ability to adapt through interactions between their parts, and their ability to self-organise, creating emergent patterns of order. If self-determination is conceptualised as the order that emerges out of self-organisation, then adaptation plays a major role in the process. To understand the processes that foster endogenous development in a CAS, therefore, it is useful to inquire into processes that support adaptation and self-organisation. It is not surprising that in fields that inquire into the dynamics of complex living systems, adaptive capacity is a common focus of inquiry. For the purpose of this study, several relevant fields offer further conceptual support and indicate avenues for theoretical development.

2.4.1 Resilience approach

The capacity of linked socio-cultural and bio-physical systems[4] to adapt, or their 'adaptive capacity', has been approached from two main directions, resilience and vulnerability. Both of these are relevant to the current study. The concept of resilience has emerged from research in ecosystem dynamics, and refers to "the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes" (Resilience Alliance, 2009). Holling's (1973) seminal paper made a distinction between commonly used definitions; engineering resilience concerns how long it takes a system that has been disturbed to return to a state of equilibrium, while ecological resilience is a measure of the magnitude of disturbance that the system can absorb without changing state or flipping into a different arrangement (Gunderson, 2000;

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[4] Linked socio-cultural and bio-physical systems are referred to as social-ecological systems (SESs) in some fields and as coupled human and environment systems in others. While there are similarities in how these systems are understood and analysed, there are also differences. The differences are important to my arguments and my use of an indigenous biocultural systems (IBCSs) approach (see Chapter 3). I have therefore chosen to continue to use each term as it appears in the literature that I discuss, so as to explicate my line of argument, in spite of recognising that this might appear to be an inconsistent use of terms.

Holling, 1996). Ecological resilience assumes that ecological systems oscillate between different states, exhibiting far from equilibrium dynamics.

As ecosystems are complex systems, they oscillate between domains organised around attractors. When the threshold of a certain property is reached, the system flips into a new domain organised around a new attractor. Resilience is the capacity of a system to stay within a particular domain while still undergoing change, and is accomplished by reorganising so as to retain the same function, structure and identity (Walker, Holling, Carpenter, & Kinzig, 2004). A resilient system therefore has the ability to withstand disturbance through persisting or being robust, and simultaneously is able to use the opportunity that disturbance brings to reorganise into new creative arrangements (Folke, 2006). Adaptive capacity in this resilience approach involves both the ability to cope with contingencies, and to improve conditions in relation to the environment (Gallopin, 2006).

Natural resource management approaches that recognise complexity have built on the ecological resilience concept, to conceptualise resilience of linked social-ecological systems (SESs) (Berkes & Folke, 1998). Social systems in this approach are those that relate to management of land such as property rights, knowledge and attitude towards the environment (Berkes & Folke, 1998, p. 4). Adaptive capacity of SESs through a resilience approach, therefore, is related to features that enable the system to respond to change and build resilience in both the ecological and social systems, such as biodiversity and landscape mosaics (Carpenter, Walker, Anderies, & Abel, 2001), and social institutions and networks for learning and flexibility (Berkes, 2002). Throughout the chapters of this thesis I will be discussing how Kuna socio-cultural processes and practices enable system change and promote diversity to build resilience, a key system characteristic for continued endogenous development.

2.4.2 Vulnerability approach

The concept of 'vulnerability' refers to the degree to which a system is unable to cope with adverse effects of a stress (Adger, 2006) and has developed through two main research areas: natural hazards and entitlements. The entitlements field (Adger & Kelly, 1999; Sen, 1981) focuses on crises as the result of failed entitlements, producing vulnerability to livelihoods. The hazards approach (Burton, Kates, & White, 1993) produces a focus on physical elements of exposure and probability of the hazard impacting on vulnerability of populations. Vulnerability is therefore understood as a lack of entitlements or vulnerability

to particular natural hazards. According to Adger (2006) the generic features of vulnerability across fields include: resources available to cope with exposure, distribution of resources (social and natural) across the system, and institutions that mediate resource use and coping strategies.

The fields which have explored the vulnerability concept are focused on livelihoods and the impacts of stressors on human populations while work on resilience begins from an ecological systems perspective to look at management of systems. When the focus becomes linked human and natural systems, convergence between the two is evident (Adger, 2006; Smit & Wandel, 2006). As Gallopin (2006) points out, the relationship between vulnerability, resilience and adaptive capacity is not clear, but concludes that vulnerability is not, as might appear at first sight, the opposite of resilience. Vulnerability includes within it measurements of the stressor or hazard (Turner et al., 2003), where resilience does not necessarily. Moreover, resilience is defined in terms of state shifts between domains of attraction, while vulnerability is focused on the structure of the system at any one time, without necessarily including analysis of desirable domains. Similarity, however, is found in that they both assume a SES is able to cope with, respond and recover from perturbations, and can become stronger through the process. In the vulnerability as lack of entitlements approach adaptive capacity gives the system its ability to cope, adapt or recover from the effects of a stress (Smit & Wandel, 2006). From a hazards approach, adaptive capacity is a component of the vulnerability of a coupled human-environment system to a particular stressor (Turner et al., 2003). In a similar manner to that described for resilience, throughout the chapters of the thesis I will discuss how Kuna socio-cultural processes enable adaptation which influence the ability of the Kuna to cope with particular stressors, such as the effects of rising sea-levels which is an emergent phenomenon related to climate change.

2.4.3 Adaptive capacity through socio-cultural processes

Adaptive capacity is a characteristic of CASs that is necessary for a process of self-organisation. As the two preceding sections have highlighted, a focus on adaptive capacity in SESs is related to resilience - the ability to stay within a desirable domain through adapting and reorganising. It is also related to vulnerability - the ability to cope with and overcome a perturbation. The particular focus adopted here is on how the Kuna peoples have historically maintained adaptive capacity for fostering self-organisation. Both building resilience in the face of constant change and overcoming vulnerability to stressors, which it is assumed the Kuna have done at least in part successfully, is therefore of relevance.

Accordingly, the social and cultural practices and processes of the Kuna become the main area of research focus.

A cultural approach to adaptation of human and environment systems, however, is not new, and echoes the historical use of cultural adaptation in the field of cultural ecology and environmental anthropology (Butzer, 1989; Vayda & McCay, 1975). In the twentieth century approach, cultural adaptation was reasoned to be a consequence of selection acting on variation through cultural practices that help a culture survive (O'Brien & Holland, 1992). Confidence in this approach has been undermined by criticism of its functionalist and homeostatic view of culture (Head, 2009; Vayda & McCay, 1975). The difference offered in this study is the use of complexity, recognising dynamic interactions, and a deep relationship between cultural systems and ecosystems which produce hybrid material and symbolic realms of SESs (Fischer-Kowalski & Weisz, 1999).

The concept and hence the study of adaptive capacity using dynamic approaches to human-nature interactions is becoming a valuable research area (Head, 2009). This is especially true in certain fields, such as the field of global change, and particularly climate change (Adger, Arnell, & Tompkins, 2005; Liverman, 2008). Research on adaptation to climate change requires recognition of complex dynamic interactions between humans and nature, as well as appreciation of scale (Adger et al., 2005). My endogenous development approach shares much with the adaptation to climate change research, but as Smit and Wandel (2006) highlight, not all research on adaptation to climate change has the same scope or purpose. Several typologies of adaptations to climate change are evidence of the multiplicity of dimensions and factors that influence their occurrence. These include: their timing relative to a stimulus (anticipatory, concurrent or reactive); their level of spontaneity (autonomous or planned); their spatial scope (local or widespread); the form of change they involve (technological, behavioural, institutional etc.); and the degree of adjustment or change they bring to the system (Smit, Burton, Klein, & Wandel, 2000; Smit & Wandel, 2006). While it is useful to recognise a multiplicity of types of adaptations, the focus of self-organisation and endogenous development calls for a closer look at processes that foster adaptation rather than the resulting adaptations themselves. Nonetheless, throughout the analysis of Kuna adaptive capacity, different types of adaptations will be discussed, highlighting a major difference between adjusting to change and proactively creating new arrangements.

Recent examples illustrate a growing interest in understanding the social dimensions that support adaptive capacity (Adger, 2003; Adger et al., 2009; Pelling & High, 2005; Pelling, High, Dearing, & Smith, 2008). Of these, several point to a need for exploration of the role of

culture and cultural practices in understanding adaptive capacity of SESs (Adger et al., 2009; Head, 2009). In this thesis, Kuna adaptive capacity is approached from a cultural and social processes perspective. The wider focus on endogenous development requires an appreciation of 'latent social capacities'(Pelling & High, 2005) that can support processes of adaptation and coping with stress as well as long term development goals. Similar studies with indigenous peoples have identified different levels of adaptive capacity such as coping with change and strategically adapting over long periods of time (Berkes & Jolly, 2001). The socio-cultural process approach will also add to emergent research areas such as investigating the limits of adaptive capacity (Adger et al., 2009) in the face of 'dangerous climate change' (Ford, 2009), and the discourse of climate justice (Adger et al., 2006). All of these areas are of particular interest to indigenous peoples who are at the forefront of climate change impacts (GHF, 2009).

In the next section, I discuss how different forms of learning are implicitly recognised as supporting adaptive capacity, and point out where this research can contribute to a deeper understanding of learning for transformational changes.

2.4.4 Adaptive management and learning

Adaptive management is an approach to environmental management that recognises uncertainty and change (Holling, 1978; Lee, 1993). The approach argues for use of systematic learning through experiments, developing alternative hypotheses and supporting adaptive learning to deal with constant change. Some make a distinction between passive adaptive management and active adaptive management (Allan & Curtis, 2003; Shea, Possingham, Murdoch, & Roush, 2002). Passive adaptive management refers to use of past experiences in improving management (Walters & Holling, 1990). Active adaptive management involves deliberate experimentation to improve management practice (Lee, 1993). Active adaptive management assumes that learning from experience is an important vehicle for dealing with surprise and uncertainty. It is not surprising therefore that major barriers to its successful implementation have been found to lie in the social and organisational spheres (Allen & Jacobson, 2009), where collaboration and learning with multiple stakeholders is difficult.

'Double loop' learning, introduced by Argyris & Schön (1978) in the organisational learning field, is a theory of learning that allows questioning of assumptions that underlie any espoused theory of action, allowing a shift in the way strategies are framed (Smith, 2001). It is argued that 'double loop' learning is necessary in environmental management due to the

unpredictable nature of SESs (Michael, 1995). Lee (1993, p. 3) describes 'double loop' learning as the "process needed to overcome problems that are not recognised or not solvable by the theory embodied in the organisation. It requires rethinking the purposes and rules of operation so as to diagnose the problems of theory that underlie practical problems". Double loop learning, as used in an adaptive management approach, supports adaptive capacity by creating new paradigms to deal with surprise.

Much progress has been made in linking indigenous knowledge systems with adaptive management and resilience in SESs (Berkes, 1998, 1999; Berkes & Berkes, 2009; Berkes, Colding, & Folke, 2000; Berkes & Folke, 2002; Berkes & Jolly, 2001). Furthermore, it is thought that re-organisation of SESs is facilitated by the capacity of indigenous knowledge to foster double loop learning (Berkes, Colding, & Folke, 2003). Most of this work, however, focuses on traditional ecological knowledge (TEK), and some recent examples illustrate a continued trend of comparing the usefulness of TEK and science for conservation (Lyver, Jones, & Doherty, 2009; Moller, Charleton, Knight, & Lyver, 2009). The cultural and social processes approach to adaptation taken in this thesis will add to this body of literature by taking a wider view of indigenous knowledge systems as driving endogenous development.

Recent theorising on the role of indigenous knowledge in facilitating system transformations (Morrison & Singh, 2009), views it as going beyond facilitation of double loop learning. This approach argues that ritual and spirituality are used by indigenous peoples in transformative processes. Transformational learning has been recognised as occurring deeper than double loop learning, and is important for dealing with surprise and uncertainty in SESs (Gunderson, Holling, & Peterson, 2002). Similarly, deep learning has been argued to occur during re-organisation when underlying philosophies of the system are challenged (Gunderson, Holling, & Light, 1995). There is, therefore, an implicit realisation that a form of learning beyond what double loop describes and involving ritual practice supports adaptation by indigenous peoples in SESs at times of crisis or in the face of surprise. For an understanding of how endogenous development may be facilitated this notion needs to be explored further. This study provides an opportunity to explore this under theorised area, by using a cultural practice approach. The ability to function at 'the edge of chaos' requires practices that embrace complexity and true uncertainty, and adaptive management has thus far failed to illustrate how to foster fundamental changes in SESs for sustainability.

2.5 Adaptive and Reflexive Governance

In preceding sections, a theoretical framework of endogenous development was developed. The cross-scale approach dictated by complexity requires that the central focus of adaptive capacity and self-organisation be connected into wider scale sustainable development and co-evolutionary interactions. Governance theories are concerned with how societies share power and shape collective actions (Young, 1992). Theories of governance across scales offer a vehicle for articulating how endogenous processes support sustainable development and co-evolution.

Many forms of governance have been discussed in the literature, and one typology highlights three modes: self-governance, co-governance and hierarchical governance (Kooiman, 2003). These involve different levels of integration between society, local communities and government. A complexity perspective argues that a combination of all three governance modes is in fact necessary. Local governance emerges from local interactions and is therefore self sufficient, while the connections into higher levels of collectivity require co-governance. The hierarchical governance that is typical of governments is necessary for higher levels of collectivity, but it must be tied into lower levels so that connections between parts at lower levels allow for higher level emergent patterns. This is also consistent with a sustainability approach, which, as van Zejil-Rozema and Kemp (2007) argue, must be pluralistic, to match the inherent diversity of the world. Governance of natural resources needs to accommodate diverse views, use networks across actors at different scales and support adaptability and transformative changes (Loe, Armitage, Plummer, Davidson, & Moraru, 2009).

If the purpose of governance in a SESs is to support self-organisation through adaptations then several areas become important: participation and deliberation for self-organisation, polycentric and multilayered institutions, and accountability in authorities (Lebel et al., 2006). An adaptive governance model builds on resilience, focusing on flexible institutions that act across levels (Folke, Hahn, Olsson, & Norberg, 2005). Another similar model is that of reflexive governance (Voss, Bauknecht, & Kemp, 2006) which adds reflection to the multi-level approach. Reflexive governance recognises that complexity and uncertainty are key issues, and therefore focuses on problem solving processes.

While the main focus of this study is on cultural and social processes for adaptive capacity, a secondary focus is on collective governance as a vehicle for linking across-scales for sustainable development. Adaptive and reflexive governance models highlight the importance

of a cross-scale approach (the methodological implications of this are discussed in Chapters 3 and 4) and this will be a key aspect of inquiry into Kuna governance. In particular, it will enable an understanding of local processes that support endogenous development within the wider context of sustainability and co-evolutionary interactions. Figure 3 illustrates how inquiry into social and cultural practices supports understanding of adaptive capacity, collective governance and endogenous development.
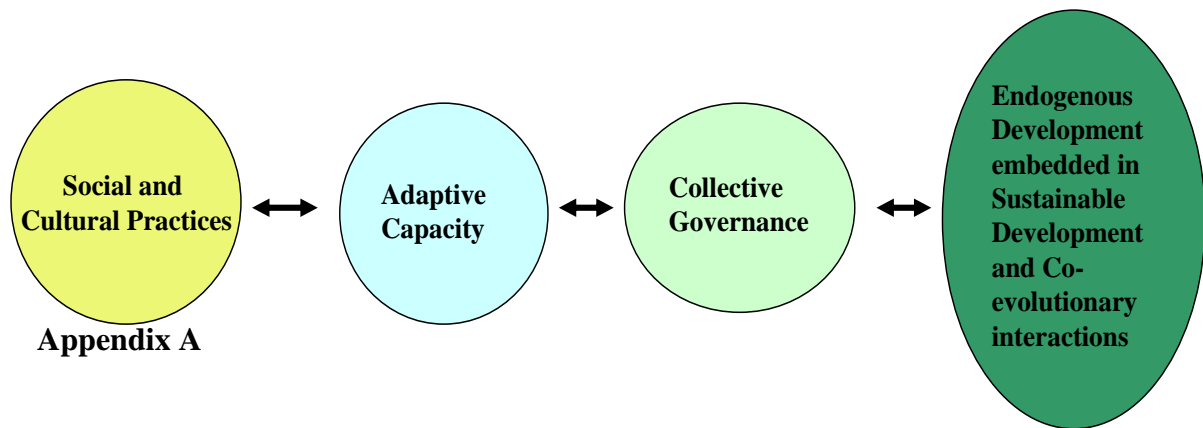
Figure 3 Conceptual framework for inquiry into adaptive capacity

Social and cultural practices contribute to adaptive capacity in collectives. Adaptive capacity enables self organisation through collective governance. Endogenous development which is aligned with sustainable development and understood through Figure 2 emerges out of self-organisation through collective governance. The double headed arrows indicate the mutual interacting relationship between each concept.

2.6 Summary

This chapter began with a review of prominent development theories from modernity and progress through to current models of participatory, emancipatory and sustainable development. Planned development inherited underlying assumptions of development as an exogenous process that is brought to the less developed. While bottom-up approaches have theoretically critiqued the externally driven project based development model, they have reinforced dichotomous views of bottom-up versus top-down development, failing to provide avenues for supporting development from within. Further, the globalised setting of today calls for a more networked approach that recognises processes that support self-determination as rooted in a locality and simultaneously embedded within an interconnected and complex world. Sustainable development offers some useful tools for an interconnected view of the world, with an intricate relationship of human and environmental systems as central to supporting local development. Next, an endogenous development approach was furthered through a complexity perspective, providing a theoretical framework for viewing endogenous

development as emerging out of local interactions between parts of a CAS. This local process is connected to wider processes of sustainability and co-evolution between socio-cultural and bio-physical systems.

With the theoretical approach to development explicated, the focus of inquiry on adaptive capacity becomes clear. Adaptive capacity of a CAS is pivotal to the process of self-organisation, out of which endogenous development emerges. Adaptive capacity is gaining attention in fields that are concerned with the dynamics of SESs with the two main approaches being adaptive capacity to build resilience and adaptive capacity to overcome vulnerability. The focus taken in this thesis is on social and cultural practices of the Kuna, since it is assumed that they provide a good example of historical and ongoing adaptive capacity. This approach to understanding adaptive capacity is timely, in light of the current interest in adaptive capacity as regards to climate change, and areas where it can contribute were highlighted. Similarly, adaptive management is a field that uses a complexity view of SESs dynamics and argues for learning as an important process for managing uncertainty and change. Indigenous knowledge as a vehicle for adaptive management has been explored theoretically and a considerable body of empirical work in the area exists. This thesis aims to contribute to and extend such approaches through application of a cultural practice approach and understanding vehicles for transformative change. Finally, the focus of adaptive capacity was linked to research on governance, as the collective processes through which society makes decisions regarding their development.

Chapter 3

Kuna Yala as an Indigenous Biocultural System

Es muy importante que conozcamos nuestra historia. Cuando la conocemos nos da armas para defendernos, y nos posibilita gritar ante cualquier enemigo. Ella no pasa, ella está viva y la estamos viviendo. Pero es muy importante sentirla viva, saborearla, adueñarnos de ella cada día mas y mejor.

It is important that we know our history. When we know it, it gives us weapons to defend our selves, it enables us to shout in the face of any enemy. History does not pass, it is alive and we are living it. But it is very important to feel it living, to taste it, to know and own it every day more and better. Saila dummad Inakeliginya (Kuna high chief) quoted in (Wagua, 2000, p. 28)

3.1 Introduction

This chapter provides an overview of the Comarca Kuna Yala, the largest of three territories of the Kuna people in the Republic of Panama, describing the local context within which the research was undertaken. The review provided in this chapter is based mainly on secondary sources of information, such as published work of previous scholars who have undertaken meticulous reviews of historical documentation on the Kuna.

The chapter begins with a historical overview from pre-colonial times up until the 1925 Kuna Revolution. The Kuna story is similar to other indigenous peoples' stories in that interactions with foreigners since colonisation led to political struggles, but, unlike many, it also includes triumphs and successes. Their relative success highlights characteristics of the Kuna story that have drawn many researchers to Kuna Yala in the past, and similarly was influential in the conception of this research.

The second part provides a description of contemporary Kuna Yala focusing on its environmental, social and political features and an introduction to the two communities where in-depth inquiry was conducted. Next, a brief introduction to the spiritual belief system and collective memory of the Kuna people is provided. The cultural and spiritual systems described continue to be employed in managing social processes and governance, and in mediating the relationship of people with nature. Finally, the theoretical framework of endogenous development, developed in Chapter 2 (Figure 2) is synthesised with frameworks used by indigenous organisations, to develop an interpretation of Kuna Yala as an Indigenous Biocultural System (IBCS).

3.2 Historical Overview

History is the telling of a story of the past within the context of today. The context within which the story of the Kuna is told and interpreted today is that of an indigenous peoples in a post-colonial situation. Analysis of indigenous history in a post-colonial setting is fraught with controversy over contested narratives (Atwood, 2005, pp. 165-196). It is beyond the scope of this brief historical overview to provide a full account of the major historical narratives of the Kuna people[5]. The overview reflects the historical account provided by Kuna collective memory held orally and published by the Kuna, while other interpretations of Kuna history (by historians and scholars) are used to complement the Kuna narrative.

3.2.1 The Kuna story pre-colonization and up to 1900

The history of the Kuna peoples is held as part of their collective memory, and is passed down from generation to generation, orally. According to Kuna collective memory, the origin of the peoples of Kuna Yala and their present socio-political structure are located in the north western corner of what today is Colombia. The Kuna come from near the Atrato River, known as *Ogigidiuala*, *Koskun diuar* and *Amukua diuar* in *dule gaya* (the Kuna language) (Brown, 2005). Their social organisation began with the formation of family groups, with no formal social or communal structures. They grew in size and became more structured through the guidance of leaders. The process is believed to have begun in the 14th century and continued through to the 16th century (Brown, 2005). Before the arrival of the Spanish conquerors, the Kuna faced confrontations with neighbouring tribes, pushing them to the western part of the Darien region. Kuna oral history affirms that the home of the Kuna peoples for the last 500 – 600 years and the birthplace of the Kuna socio-cultural system, as it is known today, is the land between the Atrato River in the Choco province of Colombia and the Tuira river in the Darien province of Panama, an area the Kuna continue to inhabit today.

It is unclear from oral history, where exactly the Kuna were located at the time of the arrival of the Spanish. Historical records of the early colonial period show that in the early 1500s the land that today is known as Kuna Yala became the site for initiating the conquest of the American mainland. A village was established at a western point called Acla, in what was known as the San Blas coast (Howe, 1998; Langebaek, 1991). In 1524 the Colonial headquarters were moved to the Pacific coast and the Spanish developed their settlements around the western part of the isthmus, facilitating transport of goods shipped from the south

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[5] For a more in-depth historical review of Kuna Yala see Howe (1998).

across the isthmus (Langebaek, 1991). It is not till the 1600s that records of missionaries confirm the presence of Kuna in the region (Howe, 1986).

During the following three hundred years, the Kuna lived stretched from the Uraba to the Darien and interacted with foreigners; Spanish, Scottish, French and English colonising forces, pirates and missionaries, and through trade relations. At times, they suffered attacks from both pirates and colonisers, and fought with and againts both sides in order to defend themselves. Attempts at civilizing the indigenous peoples through missions were generally unsuccessful. The recent work of Gallup-Diaz (2002) uses sources that allow an indigenous perspective, and provides a description of 17th century Kuna communities that were under the leadership of *leres* (the modern term is *nelegan* - seers). He argues that interaction with Europeans required new leadership roles for mediation that led to the creation of new leadership positions in the form of chiefs. The colonial period, therefore, marks a substantial increase in interactions with foreigners which influenced the geography of the Kuna, and their socio-cultural world.

By the early 19th century, most Kuna lived in the Darien and San Blas regions, which became less important during the times of Latin American nation building, offering the Kuna a relatively safe haven. In 1822, the land the Kuna inhabited became part of the Colombian state. State policy attempted to civilize the indigenous population through commercial and missionary activities, but overall efforts were unsuccessful (Martinez Mauri, 2007). During this time, the Kuna started to organize regionally to negotiate their territorial rights within the Colombian State. In 1845 a Kuna high chief was recognised by the Colombian state for the first time. This formal acknowledgement facilitated negotiations that eventually led to the formation of Tulenega, the first Kuna territory within a nation state. At about this time, the Kuna left the rivers of the Darien behind and established themselves in the archipelago of San Blas, today known as Kuna Yala. Reasons for the migration include the opportunity for coconut trade from the coast and safety from epidemics such as malaria that are less frequent in coastal areas, combined with the push of warring tribes such as the Emberra (Holloman, 1969; Howe, 2002).

3.2.2 Panama, the revolution, and the establishment of Kuna Yala

The following brief summary of the post 1903 period draws on the detailed work of Howe (1998), earlier work of Holloman (1969), and Kuna records of the events leading up to the 1925 revolution compiled in the book *Así lo vi y así me lo contaron* (Wagua, 2007).

When the Republic of Panama was established in 1903, the Kuna were living on islands in the San Blas archipelago. The Kuna story is set within the context of the creation of the Republic of Panama, itself a story of intervening political systems, motivated mainly by US interests in the construction of the Panama Canal. By 1903, the Kuna had established a regional governance system and Inanaginya of Sasardi in the eastern section of San Blas was their elected chief. The relationship with the Panamanian State during the early years of the Republic took the form of courtship through State advisors sent to Kuna Yala to ensure Kuna allegiance to Panama over Colombia, resulting in divided factions. The Eastern and Western factions favoured Colombia while the central faction favoured Panama. Complicating the situation further was the split between a group that favoured Christianisation and others opposing it. Nargana became the first community to allow Christianity into San Blas, through efforts of chief Charly Robinson, a man who spoke English and had travelled to the Caribbean. It was also the first community to have formal schooling, first through a Spanish Jesuit priest and later through an English born protestant evangelical missionary. The majority of San Blas communities at the time opposed the changes occurring in Nargana.

A change in leadership in the Panamanian Government brought new policies for consolidation and assimilation of the Kuna into the state system. This led to the agreement of some communities to have a greater state presence on the islands in the form of schools and police stations (Colonial Police). In 1915, the Panamanian government set up a Governor's office on the island of Porvernir. During the following years, the Kuna experienced pressure from an increase in outsiders pursuing commercial activities (rubber collection and turtle hunting) in their territory, which created motivation for consolidation of regional autonomy. In 1917, the previously divided Kuna leaders all recognised Panamanian sovereignty.

In approximately 1920, the Panamanian policy for 'civilizing' and assimilating the Kuna took on new force. The Colonial Police stationed on islands actively subjugated the Kuna, through prohibiting traditional practices. Chief Robinson of Nargana had been named Governor of the region and in spite of his efforts, was unable to control the subjugating acts of the Colonial Police force. Talk of rebellion among the chiefs began at this time.

At the same time, an American by the name of Richard O. Marsh was in San Blas. Marsh was an ambiguous character, described by Howe (1998, p. 201) as an "undiplomatic diplomat, impolitic politician and gentleman adventurer". He was on an expedition to find legendary white Indians and looking into rubber plantations in San Blas. He became a supporter of the military and political strategy for a Kuna revolt. He took a delegation of Kuna to Washington, hoping to gain US approval to support the Kuna, and for San Blas to become a US protectorate. While his wish of San Blas becoming a US protectorate did not eventuate, the US did become supporters of the Kuna cause.

The Kuna Revolution involved an uprising against the Colonial Police in several communities simultaneously on February 21, 1925. The Kuna strategy was to rise against the Police when they were inebriated while celebrating Carnival. The revolution was well organised, thus controlling any significant counter attack by the Panamanian forces. Nele Kantule of Ustupu and Olokintipilele of Ailigandi, with Susu and others from Ukupseni led the uprising. Divisions between old factions within San Blas remained, however, and as a result, the Eastern faction did not take part in the rebellion. The rebellion was so well planned that when the uprising was occurring in San Blas, a drafted declaration of independence (which Marsh had helped with) had already reached Panama. While Marsh had not been assured the support of the US, the US cruiser Cleveland was sent to San Blas. It beat the Panamanian steamship that was coming to support the Colonial Police. A truce was signed on board the Cleveland where the US Ambassador and Panamanian Officials met with Kuna leaders. While the bloodshed of the Kuna Revolution was minimal, the strategising and organisation behind the uprising led to a reframing of the relationship of the Kuna peoples to the State, ending forceful assimilation of the Kuna, and establishing a diplomatic relationship between the Kuna and the State.

After 1925 the Kuna lived in relative peace in an ambiguous relationship with Panama. In some communities, such as Nargana, Christian missions soon returned, as did schooling. Communities under the Revolution leaders, such as Ustupu and Ukupseni went through a time of re-establishing a more traditional form of organisation and leadership. Holloman (1969, p. 436) argues that the role of Nele Kantule during the post revolution years was pivotal in the consolidation of what was considered in 1967 to be the Kuna 'traditional' system. The relative freedom enjoyed by the Kuna during the post-revolution period fostered social and community consolidation processes.

Eventually, through diplomacy of Kuna leadership with the Panamanian State, San Blas was recognised as a Kuna territory in 1938, with a constitution drawn up in 1945.

Interestingly, San Blas was still internally divided into three factions; one led by Nele Kantule of Ustupu, one by Inabaguinya of Sasardi and the third by Charly Robinson of Nargana. They all united to gain regional territorial autonomy. The end result of the negotiations with the Panamanian State was the development of Law 16 of 1953 which went into effect on February 1st 1954, and still stands today as the legislation that provides for territorial and governance autonomy of San Blas by the Kuna. It recognises the Congreso General Kuna (Kuna General Congress) as the regional governance structure. In 1998, using political force through Kuna legislators the name of the Kuna territory was officially changed to Comarca[6] Kuna Yala.

The Kuna have led the way for indigenous rights movements and attainment of indigenous territorial autonomy in Panama. Since the formation of Kuna Yala, the first Comarca in Panama, four more have been established after long political struggles; the Comarca Embera-Wounan was established in 1983 in the Darien region, followed by two more Kuna Comarcas (Madungandi and Wargandi) bordering Kuna Yala. Finally, the Comarca Ngobe Bugle was established in 1997 in the western part of the country.

3.3 Kuna Yala Today

3.3.1 Geographical location and access

The Comarca Kuna Yala encompasses the San Blas archipelago, bordering on the east with Colombia and on the West with the province of Colon, and a strip of land from the Caribbean coast up to the main divide of Panama (Archibold & Daley, 1993) (see Map 1). The terrestrial portion is 250 km long from western to eastern borders, and between 10 and 20 km wide from the coast to the main divide. The archipelago includes coral reefs, mangrove forests and over 360 islands (Guzman, 2003; Hoehn & Thapa, 2009). The total area of Kuna Yala including both the land and archipelago with all the marine resources consists of 5,400 km^2 (CGK, 2008). The terrestrial portion of Kuna Yala is estimated at 2,393 km^2 or 3.2% of the total 75,517 km^2 of Panama (CEPAL, 2005).

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[6] Comarca is a Panamanian political division for indigenous territories, in which traditional authorities and governance processes of their General Congresses are recognised by the State.
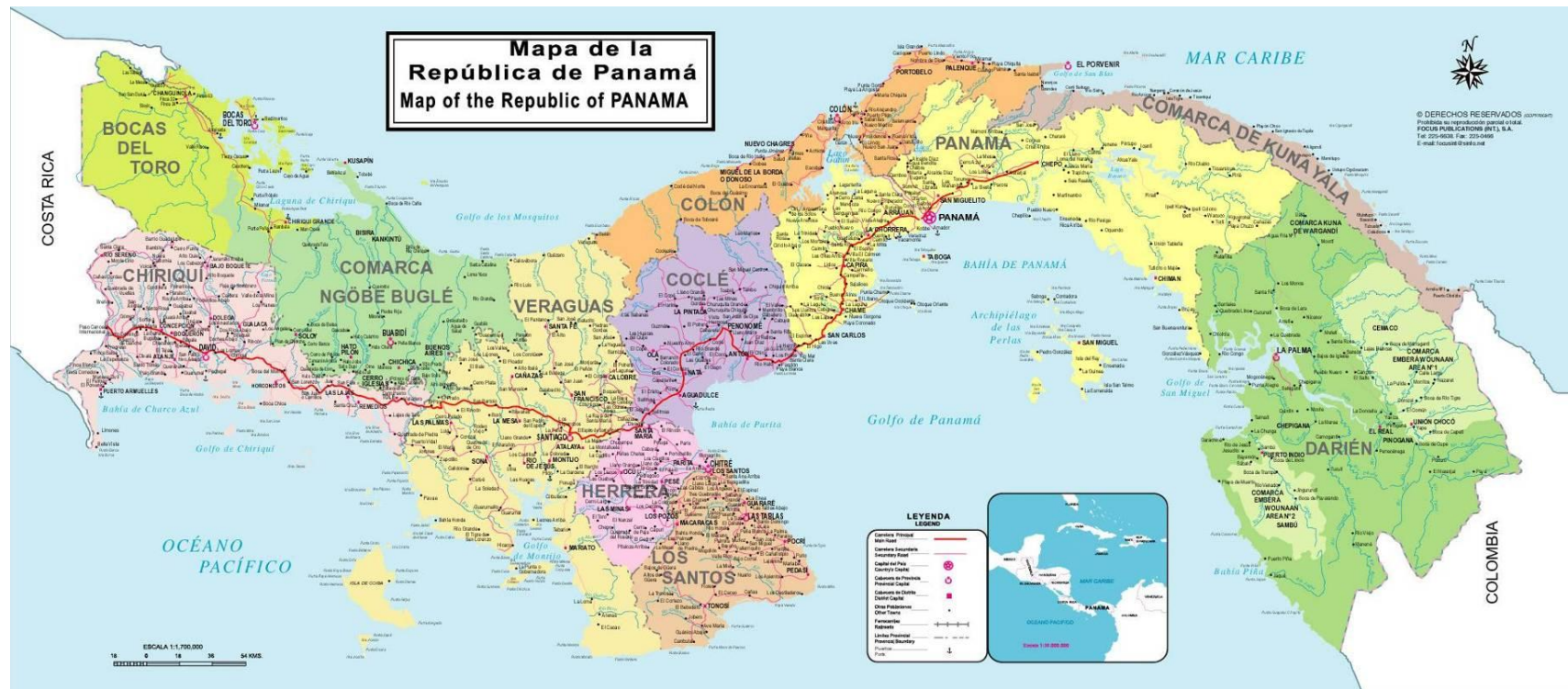
Map 1. Political map of Panama Kuna Yala is located on the North East Caribbean coast of Panama. Source: Smithsonian Tropical Research Institute.Downloaded from http://www.stri.org/espanol/herramientas/ayuda/index.php

Kuna Yala is an isolated region of Panama, with only one dirt road into the region that was originally cut in the 1960s. During the time I was conducting field work in Kuna Yala in 2008 the road was under construction and was passable by four wheel drive vehicles during the dry season and periodically during the wet season. The road is located in the western region of Kuna Yala, arriving at the gulf of Cardi. It is becoming increasingly important for transporting goods and passengers in and out of the western region of Kuna Yala. The long distance between Cardi and other communities of the Comarca, which must be travelled by boat, and often in fierce weather conditions, makes the route less viable for those living in the central and eastern regions of Kuna Yala. The eastern region bordering Colombia is the most isolated part of Kuna Yala. The main form of transportation into the central and eastern areas of the Comarca is by small airplanes from Panama City. The increasing cost of flying (in 2009 the price of a return ticket to Ukupseni was over 90 US$), however, is pushing people to choose the long and often dangerous journey by sea to Cardi and overland to Panama City.

3.3.2 Subsistence activities and natural environment

The Kuna obtain food and resources through agricultural production, hunting and gathering activities, which are performed on the mainland, and fishing and harvesting from the sea. The distance between the villages located on islands and the mainland varies, and locally produced dugout canoes are the main form of transportation to farming areas, and for exploiting the marine biodiversity for seafood and building materials (Guzman, Guevara, & Castillo, 2003; Ventocilla et al., 1995). Subsistence production and hunting and gathering are increasingly supplemented with cash generating activities. Coconuts have historically been the main cash crop, but their production has decreased significantly in recent years, in part due to an emergent coconut disease that has spread from Colombia (Azcarate, 2007; G. S. Gilbert & Parker, 2008). Until recently in the entire region, and still today in some smaller more isolated villages, the coconut is used as a form of currency. Coconuts are traded for household goods such as oil, soap and clothing with Colombian merchant ships and when there is a large demand for them they are sold for cash.

Most of the land of Kuna Yala contains intact primary rainforest that houses a high biodiversity of plant and animal life, making it one of the few remaining places for spotting large mammals such as tapirs and rare birds of prey such as the Harpey eagle (Ventocilla et al., 1995). The forests of Kuna Yala continue to be managed sustainably; the loss of forest

cover in Kuna Yala between 1992 and 2008 was less that 3% (108km^2) of the total forest area (INEC, 2009) (see map 2 below).

The Kuna distinguish between different sectors of the terrestrial portion of Kuna Yala; *neg serret* refers to primary rainforest or land that has not been used in living memory, *neg nussukwa* refers to secondary forest or areas that are fallow, and *nainu* is the land that is being used for cultivation. Land is claimed by clearing *neg serret*, but this is does not occur often as most families have claimed land that is lying fallow. Once the land is cleared, a slash and burn swidden agriculture is used. The Kuna agricultural system has been described most extensively by Stier (1976; 1979), and recently subsistence agricultural practice in Cardi has been described by Mauri (2007, pp. 165-196). Kuna agriculture has changed little in the years between these studies, and continues to use traditional practices. Cultivated land, *nainu,* have been described as agroforestry systems (G. Castillo, 1985), but as Stier (1976; Stier, 1979) shows, a limited number and variety of fruit trees such as avocado trees are planted as borders or within plots. *Nainu* generally contain a variety of crops such as bananas, corn, rice and coffee. However, some commercial coconut plantations are now monocultures. The majority of the produce (other than coconuts) is consumed locally.

Other sources of income include exportation of certain marine species such as lobsters (A. Castillo & Lessios, 2001), sale of crafts such as the *mola* hand sewn blouses that are part of traditional female dress (Tice, 1995), and tourism (Snow & Wheeler, 2000). No foreign investments are allowed in the Comarca, and as a result tourist activities continue to be small scale and locally managed. A recent increase in tourism has led to a growth in lodges and hotels owned by Kuna families. The coastal and marine portion of Kuna Yala, like the terrestrial portion, contains high biodiversity, with 80% of the coral reefs of the Panamanian Caribbean region (Guzman, 2003). Coral reefs of Kuna Yala are being degraded, however, in part due to mining for construction purposes (Guzman et al., 2003), and due to the effects of the rising sea temperature.

Map 2. Change in forest cover in the Republic of Panama from 1990 to 2000

Map 2 has been removed from document

3.3.3 Socio-political structure

The socio-political structure of Kuna Yala has evolved with the need for increasingly diversified organisation through a process of historical and prolonged interaction with the non-Kuna world. Today, there are 49 communities in the Comarca Kuna Yala, 39 are located on small coral reef islands in the archipelago close to the mainland and 10 are located on the mainland in coastal areas or inland, close to main rivers. According to the 2000 Panamanian national census, the population of Kuna Yala is 32,400 (see Table 2 for population distribution).

Table 2 Kuna population distribution
Source (INEC, 2002)

Indigenous population of Panama	285,231 - 10.1% of population of Panama
Indigenous population living within Comarcas	145,640 - 51.1 % of total indigenous population of Panama
Total Kuna population in Panama	67,707 - 21% of indigenous population of Panama
Population of Kuna Yala	32,400 - 42.5% of the Kuna population
Population of Madugandi and Wargandi	4,438 - 7.2 % of the Kuna population
Population of Kuna outside established territories	30,869 - 40.30% of the Kuna population

By approximately 1968, the Kuna began to feel the need to create their own legal structure for the Comarca, in reaction to inadequacies of the Panamanian Law 16 that formally created the Comarca, such as Kuna claims to land that had been left out of the original demarcation (CGK, 2010). This led to the creation of the constitution of Kuna Yala, the Ley Fundamental (Fundamental Law) approved by the CGK general assembly in 1995. Upon its approval, a commission was set up to embark immediately on the creation of the Estatuto de Kuna Yala (a Kuna legislative system) based on the constitution, creating internal regulations for the functioning of the Comarca institutions and their collective management. This group of documents constitute the legal framework that is used today for governance of the Comarca - the compilation is known as *Anmar Igar* (Our Path). Much foresight is shown in the Kuna legal framework. It contains a chapter on management of the Llano to Cardi road, written before the road was fit for general use. The Ley Fundamental has not been formally recognised by the Panamanian Government, which still recognises the Carta Organica of 1953

as the legal framework for the Comarca. This continues to be a challenge for the Kuna, and they continue to pressure the government for its recognition.

Today, each of the 49 communities of the Comarca is autonomously governed, so the exact structure and system varies between communities (Holloman, 1969; Howe, 1974). Overall though, a generic community centralised governance system is used. The centralised process is facilitated in the *onmaked nega* (a large communal house that is located centrally in the community). *Onmaked* refers to the process of collective prayer, and *nega* means house. Howe (2002) calls it the gathering house, a term that adequately describes its main purpose of managing community life through collective gatherings. The *onmaked* is more than just an administrative structure; it combines the spiritual with the political (this will be discussed in greater depth in Chapter 6). Community governance uses a participatory democracy, with open collective processes for deliberation and decision making.

The Governing responsibilities of the Comarca Kuna Yala are shared between two overarching regional institutions. The *Onmaked Dummad Sunmakaled* (officially recognised as Congreso General Kuna de Kuna Yala by the State, and will henceforth be referred to by its Spanish acronym CGK) is the highest political/administrative body of the Comarca while the *Onmaked Dummad Nammakaled* (known as Congreso General de la Cultural Kuna in Spanish and will henceforth be referred to by its Spanish acronym CGCK) is the highest cultural and spiritual authority of Kuna Yala. The addition of the world *dummad* (meaning large or superior) to the word *onmaked* that refers to the community gatherings used for governance, illustrates the hierarchical nature of the General Congresses as superior to the community systems. This, however, does not imply that communities answer directly to the Congress, but rather that the community systems fit within the higher level structures (the relationship between the two is discussed at length in Chapter 8).

The CGK is the political and administrative body, and is known as *sunmakaled* which means speaking, distinguishing itself from CGCK which is the cultural body called the *nammakaled* which means singing. Through describing the two institutions by their methodological differences they metaphorically speak of their functional differences; the CGK uses spoken meetings for administration and management of the Comarca, while the CGCK uses chanting, the main vehicle used by *sailagan* (chiefs) to facilitate spiritual development.

Boxes 3.1 and 3.2 show the objectives of the two institutions as they are outlined in the Kuna constitution. The CGK has evolved from regional consolidation of the Kuna peoples in the 19th century in negotiating territorial autonomy. The CGCK was created in 1972 (CGCK,

2010), as a result of the growing concern of leaders regarding cultural degradation in Kuna Yala. The significance of this emergent adaptation of the Kuna institutional structures for long term development goals will be discussed throughout the remaining chapters of the thesis. The many and diverse roles that the Comarca institutions play make their fulfilment a challenging endeavour.

The role of the CGK is to ensure that, internally and externally, the laws of the Comarca are complied with, as well as developing and managing new initiatives, coordinating within the Comarca and bridging to outside processes and institutions. The CGCK, on the other hand, plays a more internal role focusing on Kuna cultural and religious development. The two are meant to be complementary and mutually supporting. Both use the same democratic processes and protocols that are the backbone of collective governance. This open democratic deliberation will be discussed in detail in the following chapters as it is a fundamental collective process for supporting endogenous development.

After this general overview of the Comarca socio-political system, I now turn to the specifics of the two communities in which in-depth field work was conducted.

Box 3.1

Objectives of the *Onmaked Dummad Namakaled*

a. To protect, conserve, defend and build upon the history, tradition and customs of the Kuna peoples.

b. To promote the teaching of Kuna cosmology and ethical and social values.

c. To protect, conserve and recuperate the sacred sites and archaeological objects, documents, historical monuments, and any other tangible or intangible good and testimony of the Kuna peoples.

d. To elect the *Saila Dummagan* in accordance with this law and the internal regulations of the Comarca.

(CGK, 2009)

Box 3.2

Objectives of the *Onmaked Dummad Sunmakaled*

a. To develop plans, programs and projects for social, economic, cultural and political benefit of the communities of the Comarca.

b. To analyse, approve or disapprove and facilitate programs, plans and projects for the development of the Comarca.

c. To apply sanctions or restraining measures on institutions or individuals that carry out projects, programs and plans without its authorization, especially those of social, cultural, religious and economic influence in the Comarca.

d. To protect and conserve the communal and personal assets of the Comarca.

e. To demand and evaluate reports and activities of the *Saila Dummagan*, the commissions, representatives of state and private agencies and individuals when the interest of the Comarca require it.

f. To ratify the election of *Saila Dummagan*, based on the decision of the CGCK.

g. To sanction and approve the Fundamental Law, the Legislation, its internal regulations and resolutions.

h. To form work and research commissions for activities to be performed.

i. To control the funds of the Comarca that come from any internal or external source and those assigned in the national budget for development programs.

j. To defend and conserve the territorial integrity and identity of the Kuna peoples.

k. To protect and conserve the ecosystems and establish sustainable use of natural resources.

l. To sanction the *Saila Dummagan*, members of the board of directors of the CGK and the commissions in the event of incompliance and abuse of their functions or for infringement of the moral norms or the authority of the CGK, in accordance with this law, the Estatuto and the internal regulation.

m. To sanction the communities and individuals who infringe upon or do not comply with the authority of the Congreso, in accordance with the Estatuto of the Comarca.

n. To coordinate with State national and international authorities and organisations.

(CGK, 2009)

3.4 Community Field Sites

Two communities in Kuna Yala were chosen as field sites for several reasons. To begin with, I have lived and worked in both of the communities previously and have established relationships with leaders and others. These relationships could provide significant support for conducting participatory research. The two communities are located near each other, in the centre of the Comarca (see map 3 below) facilitating travel between them. This was considered important due to the difficulty, danger and cost of travel within Kuna Yala. Moreover, the two communities provide opportunity for analysing contemporary Kuna community processes in quite different contexts.

3.4.1 Ukupseni

Ukupseni is known as Playón Chico in Spanish, a direct translation from Kuna meaning small beach, referring to the original location of the community on the coast, by the Diwar Dummad river mouth, near its current location. Ukupseni is now located on the island of Kannirdup (chicken island) (see map 3 and photo 3.1). The island has been home to the Ukupseni community for less than 85 years, but the community continues to use the same land for agriculture, hunting and gathering. According to the 2008 census conducted by the Ukupseni Health Centre the total population of Ukupseni was 1,822 (909 men and 913 women) (MINSA, 2008). A large portion of Ukupseni community members now reside in Panama City.

Photo 3.1 View of Ukupseni located on Kannirdup showing proximity to mainland connected via a bridge.

Map 3. Western section of Kuna Yala with Kuna place names and sacred sites.

Map 3 has been removed from document
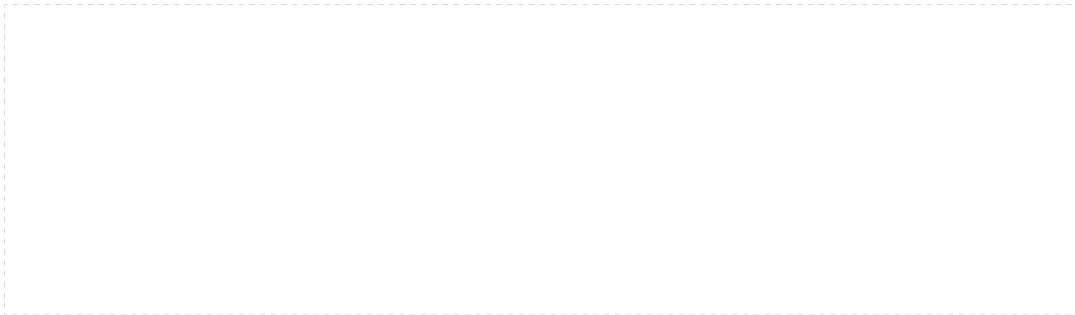
Historically, Ukupseni was important in the 1925 revolution. It was one of the communities to have Colonial Police stationed in the early 1900s and as a result suffered under the civilising policies of the government. Ukupseni leaders Susu and Dinuidi played an important role in organising the 1925 revolution against the colonising forces which led to the death of several community members. The traditional *onmaked* system of governance, with spiritual leaders continues to be used in Ukupseni today. During 2008, Ukupseni had six *sailagan*, of which three are elected as political leaders. The structure of governance used today has evolved from the central *onmaked* system of governance to include a complex structure of communally managed areas, each with its own committee (this will be discussed in detail in Chapter 6). The result is a highly complex system of committees and leadership that continues to be managed centrally through the open democratic process of the *onmaked* system.

Beyond the complexity of governance, socially, Ukupseni is made up of many groups that work in a cooperative fashion. The two largest cooperatives, Casa Blanca and Casa Azul are over 60 years old, and each has a membership of over 200 individuals. Today, there are over 20 different groups that range in size from some with a few members to up to 100s of members, involved in agricultural, fishing and other entrepreneurial activities such as bakeries or small shops. There are six Christian churches on Ukupseni that carry out their services and duties with almost no conflict. All church members also participate in Kuna religious activities in *onmaked nega*.

In 1975 the first and still the only full high school in the Comarca was established in Ukupseni. The school is an agricultural technical college. The close proximity of the island to the mainland was an important factor in deciding its location, as well as the central geographical situation of Ukupseni within the Comarca. When it was first built the school building was the only one on the mainland, located next to the landing strip. A bridge now joins the island to the mainland. Joining the school buildings is now a cluster of buildings housing the regional offices for the Ministry of Education, and the regional offices of the National Environmental Agency. On the island there is a Health Centre of the Ministry of Health that services five communities in the vicinity, and has a birthing unit, a pharmacy and is staffed with a doctor and full time nurses. Thus, Ukupseni is home to a significant number of civil servants.

Tourism is a recent phenomenon in Ukupseni, with the first hotel being established on the island of Iskardup, an uninhabited island close to Ukupseni, in 1985. The building of Iskardup with support of foreign investors led to much conflict and its closure by the CGK in

1998. In 2000, Ukupseni supported the family that owns the island in their request for a license to reopen the hotel, under Kuna ownership and management. The CGK granted the license and today Sapibenega is one of the most successful hotels in the Comarca. Since 2000, tourism has grown tremendously in Panama, and Kuna Yala has not escaped the pattern. A second hotel, also located on a small uninhabited island near Ukupseni was built as an ecotourism resort and has been operating since 2001. The owner is from Ukupseni and comes from an influential family that has held government positions in the Comarca. The family have invested in building an ecotourism project, a trend that is growing exponentially in the Comarca. In general, tourism is viewed as a positive development in the Comarca, and the CGK now has a Tourism Secretary to deal with the increase in demand and supply of tourism. In Ukupseni, tourism is viewed as a positive economic activity, providing funds for the community through tourist tax and use of the landing strip. Daily commercial flights from Panama City are the main form of transportation to Ukupseni and today most of their passengers are tourists. Conflicts, however, are not uncommon, and discussions in *onmaked nega* often revolve around decisions on how to best manage the impacts of tourism. One recurring area of conflict is ensuring equal opportunity for the sale of *mola* and other artisan goods such as carved wooden figures.

Ukupseni has a reputation in the Comarca as the community with the most social problems. Most notable is an increase in consumption of drugs such as cannabis and cocaine by youth. The geographical position of Kuna Yala neighbouring Colombia means that it is located on a major drug trafficking route from South America to North America (Bonilla, 2000). Parcels of cocaine and other drugs are often found along the coastline of Kuna Yala, brought in by the tide, these drugs are dumped by traffickers being chased by coastguards, or shipwrecked. The Panamanian press have published stories portraying drug trafficking in Kuna Yala as a way of life (Bonilla, 2002). While there is no doubt that drug use and trafficking has become a source of concern for communities and the Comarca in general, there is a tendency to portray indigenous territories as obstacles to progress in the press and to exaggerate the severity of the problem. It is often said in Kuna Yala that there is a relationship between free diving for lobsters and drug use; both due to cash attracting drug users to the trade, and the use of drugs helping the practice of diving. While there is no documented evidence of this relationship, it would seem to be true as Ukupseni is known for both lobster fishing and drug use.

Many families from Ukupseni have moved to the city to improve education opportunities, and as a result many have attained degrees and become professionals. An Ukupseni

community centre was first set up in Panama City in 1978. Originally it was managed by the community, and has now been taken over by a cooperative of community members and continues to function as a hub for Ukupseni members living in the city. Many professionals have continued to support their community through various means. In 1974 a group of Ukupseni professionals, mostly retired teachers, set up a community NGO, with the aim of accessing funds for community development initiatives. The NGO lay dormant for several years, as it is common for such small local NGOs to struggle to gain access to international funds. Recently it has secured funding for a scoping study on indigenous culture and child labour from the International Labour Organisation and is taking on a more active role in the community.

A number of NGOs have been working in Ukupseni, including Fundación Dobbo Yala, at one time the largest indigenous NGO in Panama, founded by four professionals from Ukupseni. Over the years they have funded projects in the following areas: natural resource management, solid waste management, ecotourism and the protection of knowledge of biodiversity, among others. More recently, since 2004, Fundación Balu Uala, an NGO founded by Kuna biologists with the support of foreign academics in 2002 has been working on a marine biodiversity protection project with international funding in Ukupseni. Although at times all externally funded projects have proved challenging to manage in Ukupseni, overall, the community continues to be open to the opportunities to access international funds for the benefit of the collective. The experience has also meant that the management of the projects is increasingly in the hands of the community, and it is now common that NGOs working in Ukupseni employ local people to facilitate implementation.

3.4.2 Colebir

The community of Colebir is also known as Irgandi, the name of the river and the original site of the community by the river mouth. Today, the community is located on the coast near its original location (see map 3 and photos below). The population, according to the 2008 health centre census is 327 (178 men, 149 women) (MINSA, 2008). It is one of the least populated communities in the Comarca. Historically, families from Colebir are related to those from Ukupseni, but have been living as a separate community for long enough to have their own, unique coastal identity. Colebir is a 40 minute ride by dugout canoe with outboard engine, or a three hour walk west of Ukupseni along the coast. There is no landing strip, so people travelling from Panama City to Colebir must land at Ukupseni and travel by sea. In the summer months (December to March) the sea can be very rough, and the narrow canal used to

approach Colebir is often extremely dangerous to navigate. As a result, during the summer months the community is often cut off from the rest of the Comarca and the world, and only local boatmen with much experience brave the conditions. Compared to the bustle of Ukupseni island life, Colebir is a small quiet community, based on a subsistence lifestyle.

Photo 3.3 View of Colebir from hill top behind the community

Photo 3.4 View of Colebir from the sea, illustrating its coastal location

Governance of Colebir continues to use the central *onmaked* system where both spiritual and administrative matters are attended to. There are a few committees for management of collective life such as for trail maintenance, community cleanliness, rituals, house building,

collective production and travel permission. Unlike Ukupseni, however, they are all integrated into the *onmaked* system, with no other meeting areas or formal processes. Collective house building continues in Colebir, one of the practices continued only in small communities in Kuna Yala, and particularly in the coastal communities, where materials are still readily available (see photo 3.5). This is but one example of the highly cohesive nature of life in Colebir. The first *saila* has been in office for many years and it seems unlikely that this will change until he is unable to hold the position due to old age or failing health. Likewise, the few positions in the administrative structure are held by people for extended periods of time, and there is less change and conflicts in leadership than in larger communities such as Ukupseni. This can be attributed in part to the low population and level of complexity of life in Colebir but it is also related to the maintenance of a more traditional lifestyle based on collectivity and subsistence agriculture which has, to a certain extent been consciously promoted.

Photo 3.5 Collective work on *onmaked nega* in Colebir

There is a primary school in Colebir, with three teachers managing six grades. Teachers are the only foreigners living in the community and during the field work period only one of the three teachers was not Kuna. Most children in the community attend the primary school, and for further education they either go to Ukupseni or Panama City. Many families have relatives living in Ukupseni, as there is a high degree of intermarriage between the

communities, as well as familial roots, so children are often sent to stay with relatives in Ukupseni to continue their formal education. Many children, however, do not continue school after primary level. There has been an increasing trend recently for families from Colebir to choose to move to Panama City instead of sending children to Ukupseni. Several families told me that they decided against sending their children to school in Ukupseni for fear of drug use and promiscuity. Ironically many Kuna who move to the city, including those I spoke to, end up living in neighbourhoods with high crime rates and youth gangs, making the city a far more dangerous place for youth.

There is a growing number of community members residing in Panama City. In 2008, they started to organise into a formal structure that could manage community affairs from the city, in liaison with the *onmaked* system in the community. The community controls travel of its members, requiring permission to travel even for a day trip to Ukupseni and back. There are strict regulations on travel to Panama City, restricting the amount of time women can travel without accompanying family members, and permission is always contingent upon an invitation letter from the family that will house them in the city. Men also require permission, but it is common for men to travel to earn wages in the city. The city branch of community administration helps manage such matters, and maintains the collective and community processes alive even for those residing outside.

Another difference between Ukupseni and Colebir is the lack of infrastructure of the latter; there is no aqueduct, health centre or telephones. When the community was approached by the Ministry of Health about building an aqueduct to bring piped water to the houses the collective decided against the project. Similarly it rejected telephones and a health centre. The projects were considered symbols of modernisation and older members of the collective viewed them unfavourably. Most of the community now does not oppose having an aqueduct and would prefer to have basic medical services in the community. As a consequence, the community is now attempting to obtain the support of the Ministry of Health to build an aqueduct. There is a traditional birthing house in Colebir and most women choose to give birth in the community, with the help of a midwife rather than go to the health centre in Ukupseni or the city. Traditional medicine is common practice, as in all Kuna communities, but in Colebir spiritual healing is more common than in Ukupseni.

There has been limited outside influence in Colebir, and interaction with foreigners has mainly been through the two Christian churches with occasional missionary visits and myself living in the community in 2004 as a Peace Corps volunteer. Colebir has had limited experience of NGO led initiatives working in agroforestry and agricultural projects. Today,

the community has its own NGO that has emerged out of work with a Rotary Club funded agricultural initiative. There are divided opinions in the community about externally funded initiatives, but there is reasonable freedom in allowing those interested to pursue such initiatives. Thus far, they have not resulted in other funding opportunities.

The two community field sites, Ukupseni and Colebir provide opportunity for analysing community collectives that are semi-independent, each undergoing its own process of change. Some communities in Kuna Yala, such as Ukupseni are connected to the external environment in a more direct way than other communities, such as Colebir. The two sites therefore represent the extreme conditions on a continuum of connections; Ukupseni is highly connected and Colebir is fairly isolated. The adaptive responses of each community both reflect this connectedness and exchange between the system and its environment and the unique endogenous process of each community. The advantage of working with two communities is an appreciation of both the uniqueness and similarity between communities that make up the Comarca. All Kuna communities in Kuna Yala and beyond share a common spiritual and cultural framework which guides community life. In the following section an introduction to the Kuna belief system is presented.

3.5 Introduction to the Kuna Spiritual and Cultural Framework

The Kuna cosmological framework is similar to that of many indigenous peoples', including *Nan Dummad* or Great Mother (Mother Earth) as a unifying, all-encompassing figure. It is interpreted continuously through the stories of the *Bab Igar,* the compilation of stories that make up the collective memory of the Kuna peoples. The name *Bab Igar*, Way of the Great Father (*Bab* means father and in this context it refers to the Great Father, the co-creator of the world, and *Igar* means a path or a way) or is also called *Anmar danikid igar* (the story of where we come from). Each story is an *igar*, a path, and together they make up a dynamic system of interpreting the world based on oral processes. The main vehicle for its promotion and development is a combination of recounting through chanting of the *sailagan* and interpretation and analysis by the *argargan* (chief's interpreters and advisors) which constitutes the process of the singing method of the *onmaked* system. Embedded within the stories are Kuna philosophy and theology. It provides theory about collective and individual practice in the world, and has been developed through ongoing historical processes of interacting with the world. A brief account of the creation story is provided in order to illustrate how *Bab Igar* is both a framework of beliefs and a practical tool for engagement with the cosmos, the platform from which Kuna spiritual and cultural processes emerge. It is

based on the teachings of Kuna leaders published by the Kuna General Congress and other scholars (CGK & CGCK, 2006; Chapin, 1970, 1983, 1991; Howe, 1998, 2002; Sherzer, 2001; Wagua, 2000) and on my own experience of listening to the chanting and stories in Kuna communities over six years of working in Kuna Yala.

Nan Dummad and *Bab Dummad* procreated, and *Nan Dummad* gave birth to all life; the plants, animals and humans. After this initial creation through birth, *Nan Dummad* became the earth herself. In some more recent versions of the Kuna creation story there has been a mixing of Christian theories, and some leaders make *Bab Dummad* the creator of *Nan Dummad,* but even in these versions life is created through the joined forces of both. Although there are different opinions among Kuna leaders as to the consequences of such mixing, it is still common practice to recognise both *Bab Dummad* and *Nan Dummad* when speaking in *onmaked nega*, and the belief of earth as a superior all-encompassing life force that is the mother of all humans is universal. Duality of male and female as partners is a fundamental concept in the Kuna interpretation of the world.

The first man and woman were created out of clay, named Olonaikabaler and Olonailasob. They were created in order to protect the earth and all its beings. These two beings change names through the stories, and transform themselves into Piler and Bursob. They did not, however, protect *Nan Dummad*, and the world became a dark place. Piler is said to believe himself to be the creator, the most powerful being. The children of Piler and Bursob followed in their parents' footsteps and used their special powers and abilities to create natural disasters and promote social disorder and corruption in the world. The population of the earth increased rapidly and *Bab Dummad* and *Nan Dummad* suffered through these dark times. They sent new beings to earth to try to change the ways of the descendants of Piler, and stories of the *Bab Igar* tell of many failed attempts. The stories are often used today to reflect upon corruption of leaders and followers alike.

Eventually, Mago was able to break the chain of darkness. Mago had three children. Two of them were twins; a boy called Olowaligipiler and, a girl called Gabaryai. Together they taught the savage, people of the time how to live. Their story illustrates the combination of mythical figures and historical narrative in *Bab Igar*. It is said that Olowaligipiler made love to his sister at night. Gabaryai did not know who was climbing into her hammock at night, until she used the black die of a plant to mark the man. Her brother fled when he was revealed as his sister's lover. Gabaryai was pregnant with her brother's child, and she went after her brother; she was in fact pleased it was him and not one of the savage people who had fathered her child. She was unable to catch up with him though, and Olowaligipiler eventually became

the moon, the dark marks on it depicting the marking of the black paint that revealed his incest.

Gabaryai eventually ended up at the home of a toad woman, who kept her safe from her toad children by hiding her in a ceramic pot. She eventually gave birth to eight children, seven boys and one girl. The eight siblings were raised by the toad woman, but they began to wonder why their mother was so different from them. When they realised that the toad woman was not their mother they fled the house. One of the siblings, Ibeler, had magical powers and managed to bring back to life the image of their mother using her bones, found inside a fish. Through use of medicine and magical powers the eight siblings led by Ibeler and his sister Olowaili restored goodness in the world and protected *Nan Dummad*. Ibeler, after his many triumphs on earth became the sun, which is also called *dad* meaning grandfather.

This very brief summary of the creation story and the beginning of the human population on earth is a compilation of several different versions. The chanting of *sailaga*n contains great detail of each part of the story. It illustrates how cosmology, theology and history are all intertwined in the *Bab Igar*. The Kuna see themselves as the *olodulemar* (golden people), chosen to protect *Nan Dummad*. Much like other indigenous worldviews (Harvey, 2002), humans are viewed as related directly to and descendent from mother earth, and as such provide opportunity for understanding behaviour within the natural world in a context of equality between all life forms. The *sailagan* often use metaphorical relationships between other species and human nature in their chanting, referring to general aspects of human behaviour or specifically about leadership, social practice or any other aspect of communal life. Howe (2002, pp. 47-50) describes the subject matter admissible as chants of *Bab Igar* as including counselling on social behaviour, cosmological stories, metaphorical stories to reflect on aspects of collective life, and historical chants. The *igar* have been called mythohistories due to their combination of mythical figures and historical narrative (Gallup-Diaz, 2002), and mythical-cosmological-historical (Sherzer, 2001, p. 76), while Chapin (1991, p. 41) describes them as "basic texts in history, morality, natural science and civic behaviour*"*.

This introduction to *Bab Igar* and the spiritual and cultural frameworks that are used by the Kuna to interpret the world and engage in it will be built upon throughout the chapters of the thesis. Apart from its explicit mention during chanting sessions in *onmaked*, the *Bab Igar* implicitly guides social and cultural organisation, individually and collectively. Kuna communities are organised around a diversity of leadership roles responsible for facilitating both profane and sacred aspects of life, and are analysed in Chapter 6 in terms of their role in

adaptive capacity. Ritual continues to be an important aspect of life in Kuna communities, and has been a fascination of many researchers. Kuna ritual is a vehicle for facilitating engagement with the sacred, and is analysed in Chapter 7 as important for facilitating transformative changes in individuals and collectives. Both leadership roles and ritual are understood by the Kuna through the stories of the *Bab Igar*. They take guidance from the stories of the *Bab Igar* to practice leadership and ritual, and they also add to the *Bab Igar* by continuously reinterpreting the world. Thus the collective memory of the Kuna peoples guides the Kuna world today both explicitly and implicitly. It will repeatedly be brought into the threads of the discussion that relate to cultural and social practices. It is intended that through the chapters of the thesis, the knowledge system of B*ab Igar* is understood as theoretical and practical, as passive and experiential, and as historical and current.

With this initial introduction of Kuna governance, culture and spiritual beliefs, I have intended to build a picture of the context for this research into adaptive capacity and endogenous development. The Comarca Kuna Yala is an indigenous territory, and this research aims to understand it as a CAS. It is, however, also necessary to adapt the CAS framework to the particular situation of an indigenous territory in a post-colonial setting. I do this in the following section.

3.5.1 Kuna Yala as an Indigenous Biocultural System

This research was conducted in Kuna Yala in part because the questions that led me to undertake it emerged through my work with the Kuna, but also because Kuna Yala provides the opportunity to understand adaptive capacity and endogenous development embedded within ongoing processes of co-evolutionary change between socio-cultural and bio-physical systems. While the Kuna have not always occupied the territory that is today known as the Comarca Kuna Yala, historical records suggest that the Kuna have been in the area for the last 500 – 600 years. During this time there has been considerable population movement within the region. Understanding Kuna Yala as a linked socio-cultural and bio-physical system, therefore, is not based on continuous occupation of the Kuna in the territory, but rather, is based on Kuna Yala being a bounded semi-autonomous indigenous territory within which the interactions of the socio-cultural and bio-physical realms occur in an organic and self-organising manner. Further, the Kuna understand their autonomy and territoriality through a holistic view of people in nature which is localised within the Comarca Kuna Yala.

In this study, Kuna Yala is conceptually conceived of and analysed as a CAS. In order to adequately address the second objective of the research of contributing to ongoing

endogenous development practice to support self-determination, it is necessary that I tailor the abstract tools of CASs to the contextualised local scene. To this end, in this section, I review emergent concepts that are used by scholars, practitioners and indigenous leaders that recognise a relationship between cultural, biological and territorial integrity for self-determination of indigenous peoples. The described biocultural approach is then used to frame an understanding of Kuna Yala as an Indigenous Biocultural System (IBCS).

3.5.2 The biocultural approach

In academic and policy circles, the concept of biocultural diversity has been the precursor to new approaches to conservation. The first explicit articulation of the inextricable link between biological and cultural diversity by scholars, was made at the International Society of Ethnobiology conference in Belem, Brazil in 1988 (Posey, 1988, 1999). Since then, biocultural diversity as a concept and tool has gained momentum through the work of researchers that explore the shared threats that linguistic, cultural and biological diversity face (Maffi, 2005). Biocultural diversity is defined as: " diversity of life in all its manifestations-biological, cultural and linguistic-which are interrelated within a complex socio-ecological adaptive system" (Maffi, 2005, p. 602). Some have taken the matter a step further and argue that biocultural diversity is the fuel of evolution itself (Harmon, 2002). A biocultural diversity approach to conservation is useful for interdisciplinarity (Harmon, 2007) and this has been taken up in some practical examples (Rozzi, Massandro, Anderson, Heidinger, & Silander, 2006).

It is not surprising that a considerable portion of the biocultural diversity of the world is found within areas where indigenous peoples continue to live in ancestral territories; the Amazon basin, Central Africa and Indomalaysia/Melanesia are all core areas of global biocultural diversity (Loh & Harmon, 2005; Toledo, 2001). These areas are also where both biological and cultural diversity are under serious threat. As an emerging concept, biocultural diversity recognises what has explicitly or implicitly been part of an indigenous understanding of the world; people are interconnected to and are an integral part of nature (Berkes, 1999; International Council for Science, 2002). The recent framing of research and action in conservation and development as biocultural has provided indigenous peoples with opportunity to further their efforts to protect their rights to their ancestral territories, and to protect their collective knowledge from threats such as expropriation by pharmaceutical companies.

An example of the usefulness of the concept for indigenous ends is its use in an action research project conducted by indigenous communities and organisations (including a Kuna NGO) under an International Institute for the Environment and Development (IIED) program for the protection of traditional knowledge (Swiderska, 2006). The program developed a new framework for protection of traditional knowledge through developing the Collective Biocultural Heritage (CBCH) approach. CBCH is defined as:

> Knowledge, innovations and practices of indigenous and local communities which are collectively held and inextricably linked to traditional resources and territories, local economies, the diversity of genes, varieties, species and ecosystems, cultural and spiritual values and customary laws shaped by the socio-ecological context of communities. (Swiderska, 2006, p. 360)

Evident in this definition is that a biocultural approach is all-encompassing, allowing the complex interactions between people and land and all their expressions to be understood as contributing to well-being. Other examples of the application of a biocultural approach in the practice of conservation and development, such as the work of the BioAndes regional development programme (Mathez-Stiefel, Malca, & Rist, 2009) take a more research driven approach, but none the less illustrate that a biocultural approach is useful.[7] The common objective of biocultural approaches used by indigenous peoples and development programmes is the creation of new pathways for fostering a continued interaction between indigenous peoples and their territories. Through recognising the inextricable link between people and nature, the interface of people with nature in indigenous territories is transformed into a managed relationship. The agency of indigenous peoples in shaping their territories is therefore recognised, and in some cases traditional resource management practices continue to produce low ecological impact within indigenous territories (Toledo, 2001).

While one must be careful not to fall into the trap of romanticised ideas of indigenous practice, encapsulated in the phrase 'ecologically noble savage' coined by Kent Redford (1990), in the case of the Kuna, the argument that past and ongoing practice supports high biocultural diversity holds true. It does not, however, mean that it will continue to do so against all odds. This is precisely where the focus of the research can be informative and support ongoing work with biocultural approaches in indigenous territories, so that self-determination may be promoted.

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[7] See Haverkort and Rist (2007) for the best compilation of papers on examples of the use of the biocultural diversity concept in other regions.

3.5.3 Indigenous Biocultural Systems as special cases of CASs

The two objectives of the research - developing understanding of adaptive capacity and endogenous development of Kuna Yala through complexity, and understanding how to support self-determination of Kuna Yala - can be addressed through synthesis of a complexity and a biocultural approach. The CASs framework is an analytical tool that may be applied to any living system. A biocultural approach on the other hand is well suited to indigenous territories, highlighting the historical and co-evolutionary relationship of people to land and their heritage. Bringing the two approaches together is not conceptually difficult because there are similarities between using a complexity paradigm, and indigenous worldviews and knowledge systems for interpreting processes and change (Berkes & Berkes, 2009; Berkes et al., 2003).

Synthesis of complexity with biocultural approaches has recently been adopted by the Peruvian indigenous NGO Asociación para la Naturaleza y el Desarrollo Sostenible (ANDES) as part of their strategy in developing tools for facilitating replication of a biocultural approach to conservation and development within indigenous territories (ANDES, 2009). Systems approaches and tools are potentially useful for work in indigenous territories, where the system is complex and made up of interrelated parts. The synthesis leads to a new emergent concept that is useful in analysing an indigenous territory; that of Indigenous Biocultural Systems (IBCSs).

As a new and emergent concept, IBCSs is not yet clearly defined. This study builds upon the work of ANDES, to further the use of an IBCSs approach. For this, I begin with a definition of IBCSs as a linked socio-cultural and bio-physical system that expresses the collective biocultural heritage of a particular indigenous peoples, as the result of a co-evolutionary relationship within a specific territory. I take this added challenge of bringing a complexity approach to a biocultural approach because it allows use of systems tools for analysis, and is rooted in an indigenous understanding of territory that is able to progress local goals of self-determination. It adds to the CASs framework the notion of long term co-evolutionary relationship between people and land that result in cultural and biological diversity and continues to be the heritage of indigenous peoples today.

3.5.4 Kuna Yala as an evolving IBCS

The biocultural diversity of Kuna Yala can be appreciated when flying over the territory, when images of thick tropical rainforest – *neg serret* – are intermingled with secondary forest – *neg nussukwa* - and cultivated plots with a variety of crops and trees. Similarly, biocultural

diversity is evident in the coastal landscapes and seascapes of Kuna Yala. The IBCS framing of this study requires that the processes that continue to nurture such diversity and support development be understood within a framework of ongoing development for which a historical perspective of change, adaptation and self-organisation is necessary. The historical overview provided at the beginning of this chapter shows that the Kuna story is one of interaction with other socio-cultural, political and economic systems.

Scholars for the last 40 years (at least) have discussed an increase in complexity of the Kuna social and political systems. Holloman's (1969) analysis of developmental change in Kuna Yala is concerned with levels of modernisation and provides evidence of an increase in complexity between 1903 and 1967. Howe (2002, pp. 21-24) discussed political evolution through social and macropolitical factors. Martinez Mauri (2007) provides a thorough historical account of the process of change focusing on the role of mediation and how it has evolved, showing that it has been important to the Kuna in their efforts through time to establish, consolidate, and renegotiate territorial autonomy. None of these discussions of increasing complexity in Kuna Yala use a simple, linear and evolutionary approach. Similarly, the IBCS approach views evolutionary change as a dynamic process of self-organisation.

Changes over time are understood and interpreted by the Kuna through *Bab Igar*. The stories tell how the traditional social, cultural and political system known to have been set up by the prophet Ibeorgun has undergone changes. At times, the traditional system was degraded through corrupt leadership, such as during the times of Piler. The story of the arrival of the *nelegan,* for example, tells of a process of recuperation of the system through a conscious effort of relearning through interactions with the spirit world (Wagua, 2000). Both external and internal factors account for the changes. *Bab Igar* facilitates reinterpretation of historical events in light of current situations, and as a dynamic process, the changes that are occurring are themselves imprinted in oral history. This allows the long term co-evolutionary interpretation of change that supports an IBCS approach.

3.5.5 Scales of analysis within Kuna Yala

An important and challenging aspect of taking complexity seriously is the need to undertake cross-scale analysis. CASs are made up of embedded levels of collective systems, themselves each a CAS. As an IBCS, Kuna Yala is an open system, and is interacting with the social and ecological systems of Panama and beyond. So, while Kuna Yala is the area that is bounded by the physical and socio-cultural boundaries of the territory (and these are by no means clear cut

boundaries) it is analysed as open and interacting with the external environment of Panama and the world.

As has been described in earlier sections of this chapter, Kuna Yala consists of joined terrestrial, coastal and marine ecosystems, institutional regional structures (CGK and CGCK), and 49 autonomous communities with groups and individuals within them. Due to the complexity and dynamic nature of the system, it is impossible to describe it accurately in detail. In fact, the approach taken here argues against the need for describing each part in detail, focusing instead on understanding the interconnections and processes that facilitate its dynamics. Several embedded levels of collectivity, however, can be discerned, and during analysis of particular practices and processes, awareness of different levels will allow a multi-scalar approach. Levels that are important for the interest of this research include individuals, communities and the whole Comarca. The challenge this poses for the study and the guiding principles used to support a multi scalar methodology are further elaborated in Chapters 4 and 5.

3.6 Summary

This chapter has provided the reader with the local context of Kuna Yala today. The historical overview provided background knowledge that is necessary to understand Kuna Yala as an indigenous territory within a post-colonial setting. The success of the Kuna in securing territorial rights, both prior to 1903 within Colombia, and as a result of the 1925 Revolution has been pivotal for a continued relationship of the Kuna peoples with the ecosystems, and continuation of internal processes for development. It is this co-evolutionary relationship that makes Kuna Yala a good local context within which to conduct this inquiry.

Kuna Yala today is described through its environmental, social and political characteristics. The cohesive nature of Kuna collective life which continues to be a key feature of Kuna social organisation will be discussed in greater detail throughout the chapters of the thesis as an important characteristic that supports adaptive capacity. The *Bab Igar* collective memory of the Kuna was described as theoretical and practical, passive and experiential, and historical and current. It provides the philosophical framework which continues to be an important aspect of all social and cultural processes. The creation story illustrates a common indigenous framework of people as integral parts of *Nan Dummad*. The role of the Kuna as stewards of *Nan Dummad* will also be highlighted as important for facilitation of interactions between parts of an interconnected complex system.

Finally, the chapter discussed an interpretation of the indigenous territory of Kuna Yala that is argued will be useful for this research into complexity and development, and consistent with cutting edge approaches to indigenous development. The biocultural diversity concept developed by scholars echoes the indigenous framework of people as integral parts of nature, and provides opportunity for furthering efforts to protect indigenous rights and support self-determination. The biocultural approach was then synthesized with a complexity and CAS approach, creating a new conceptualisation of indigenous territories that is both supportive of indigenous struggles and goals and acknowledges the usefulness of a CAS framework. Kuna Yala therefore will be analysed as an IBCS, providing for a long term co-evolutionary view of ongoing processes of change within which contemporary processes and challenges are analysed. This conceptual synthesis contributes to both theoretical development and on the ground efforts by and for indigenous peoples.

Chapter 4

Building a Framework for Reflection and Learning

The basic ideology of PAR [Participatory Action Research] *is that a self-conscious people, those who are currently poor and oppressed, will progressively transform their environment by their own praxis. In this process others may play a catalytic supportive role but will not dominate.* (Anisur Rahman, 1991, p. 13)

4.1 Introduction

In this chapter, I present the methodological framework, the process and the methods that I used to undertake this study. Following Seale's (1999, p. 476) argument that "the development of one's own 'style' should be built on a series of principled decisions, rather than being the outcome of uninformed beliefs", I develop my own 'style' of research, built around two pillars of the project; use of a CASs framework which necessarily requires a holistic systems approach to understand complex processes, and the aim of contributing to ongoing processes of development, for which a collaborative and action oriented research methodology is appropriate.

In the first section, systems thinking and participatory action research are brought together for methodological development, through examining questions of ontology and epistemology. I will illustrate how a pluralistic ontological and epistemological approach is appropriate. A further layer of methodological complexity is then addressed, one that arises from the positionality of the study and myself as a researcher engaging with processes of indigenous self-determination in a post-colonial setting. This discussion leads to analysis of ethical considerations that are both common to qualitative research and specific to research with indigenous peoples. In this context, I will outline the steps that I have taken to ensure that my research practice has been ethical.

Next, I discuss the validity and credibility of the research reflecting on how research quality in participatory action research and interdisciplinary research is understood and ensured. Then, I make the research process and methods used as transparent as possible. I describe the steps that make up the research process, based on iterative cycles of reflection combined with in-depth inquiry. Finally, I discuss the process and tools that enabled conceptual clarity to be built in this collaborative endeavour, particularly in relation to the use of a 'reflection group'.

4.2 Building a Methodology

A common approach to building an appropriate research methodology is through situating one's work within a particular research paradigm. The term 'paradigm' has been used to refer to the system of beliefs that are held by researchers (Guba & Lincoln, 1994; Lincoln & Guba, 1985, p. 72). As Thompson and Perry (2004, p. 403) put it, "beliefs about the nature of reality (ontology) within the paradigm drive how knowledge about that reality is sought (epistemology). In turn, those beliefs then drive the research techniques (methodology) chosen for the research". Using this approach, defining the assumptions that underlie a particular research approach is necessary to ensure validity of the research findings.

In an attempt to unmask the assumptions behind different research approaches some scholars have created typologies of predominant paradigms that a researcher may consciously use. One such typology is shown in Table 3 which compares four paradigms that are commonly used in social research. The realist ontology used in both positivist and post-positivst paradigms is fundamentally different from the ontologies of constructivism and critical theory that do not incorporate a reality that exists external to the individual or the group. Paradigms, however, are not clearly bounded, and historical shifts of paradigms in the social sciences has occurred through a blending and morphing process that relates not only to different ontological approaches but also to social and political situations the researchers find themselves in (Denzin & Lincoln, 1994). Fitting social research into a clearly defined paradigm therefore is both difficult and simplistic.

The conceptual framework that guides this research, as described in Chapter 2, is based on complexity. Some argue that complexity theory is a new research paradigm (Fuller & Moran, 2001; Phelps & Hase, 2002). While it may be an emerging paradigm, it has not gained such a 'status' yet, and is still finding its footing in social science research. Perhaps it is not necessary or indeed beneficial for complexity to become a paradigm as some argue the paradigmatic approach to methodology is an after-effect of positivism (Checkland & Holwell, 1998; Norris, 1997) and new, more flexible, approaches are needed in an age of sustainability where research is necessarily problem-based and interdisciplinary.

Table 3 **Comparison of four paradigms of social research**

(Adapted from Guba & Lincoln (1994))

Paradigm	Positivist	Post positivist	Constructivist	Critical Theory
Ontological	Reality exists as a tangible external world. Naïve realism	Reality exists but can only be understood imperfectly through our social constructions. Critical Realism	Reality only exists in a form constructed socially by individuals and groups.	Reality is shaped by social, political, etc. values and processes that historically affect the world
Epistemological	Researcher objectively finds truth	Researcher can objectively find probable truth that is based on social constructions	Researcher is a subjective part of understanding. Can only construct created truths	Researcher is a subject with values that influence their understanding
Methodological	Propositional hypotheses subjected to empirical testing	Dualism of researcher as objective observer abandoned, must be critical about knowledge as it is probabilistically true	Interaction between researcher and subjects to understand social constructions	Dialectical dialogue between participants that transforms reality

In the following sections I build my own methodological framework through engaging with questions of ontology and epistemology as they relate to the objectives and pillars of my research. The two main objectives of the research - to contribute to reframing of development through complexity theory and, to support processes of self-determination – produce two pillars that I build upon. The first pillar is the use of a CASs framework which necessarily requires a holistic systems approach to building understanding of complex processes. The second pillar is the aim of contributing to ongoing processes of development, for which a collaborative and action oriented practice is required. I address each of these in turn, and discuss aspects of how they contribute to my methodological framework.

4.2.1 A CASs approach and systems thinking

The theoretical approach that is employed here to understand the key processes for adaptation and endogenous development is based on the assumption that IBCSs are wholes that are more than the 'sum of their parts' and are best understood as CASs. Kuna Yala as an IBCS is an open system that contains a multitude of interdependent parts such as communities and

ecosystems. An inquiry approach that is concerned with understanding wholes and is therefore useful in this study is systems thinking.

Systems thinking grew out of a critique of the failure of reductionist methodologies rooted in positivism to deal with complex problems in the world (Checkland, 1984; Garnsey & McGlade, 2006). This led to an attempt to build a theory or 'paradigm' that would unify the disciplinary schism in science that was thought to be a result of reductionism. The attempt at developing a General Systems Theory failed to produce the promised unification (Berlinski, 1976). As some argue (Jackson & Carter, 1991), rather than viewing it as a failure, inability to build a unified science is consistent with the need for differences and diversity to drive the creative progress of science. Conflicting paradigmatic stances continue to be an integral part of systems thinking (Midgley, 1996a).

Several distinct schools of systems thinking can be discerned. Different schools relate loosely to different ontological stances (Barton, Emery, Flood, Selskly, & Wolstenholme, 2004; Flood, 1990; Jackson & Keys, 1984). The ontological and epistemological stance of a systems approach is derived from how the problems they are addressing are defined. A convergence between 'hard' and 'soft' approaches provides two main directions for defining, analysing and working with complex problems. The 'hard' approaches stem from systems engineering in which a system is seen as tangible and existing and can be understood holistically in order to be acted on, improved, fixed etc. The 'soft' approaches refer to working with systems that are representations of the way people view a problem. Peter Checkland has been the main proponent of the soft approach and the father of a now widely used methodology; soft systems methodology (SSM) (Barton et al., 2004; Flood, 2000). Checkland (1984) classifies systems into a minimum of four types; natural systems, human activity systems, designed physical systems and designed abstract systems. Table 4 compares the characteristics of two types, natural and human activity systems, and illustrates how differences in the way systems are conceived influences the appropriate epistemological stance a researcher should take.

Table 4 Classification of systems

from Checkland   (1984, p. 112)

Characteristic	Natural Systems	Human Activity Systems
Origin	Natural processes of evolution and are part of the regularities of the universe	Humanity's self consciousness. Situations dominated by the meaning attributed to them by man.
Role of Researcher	The researcher is an outside observer who can gain knowledge into the system	The researcher is a part of the system and so the point of view is essential to understanding the system

Social systems, Checkland (1984) argues, are observed in the world and they are "a mixture of a rational assembly of linked activities (a human activity system) and a set of relationships such as occur in a community (i.e. a natural system)." (p. 121). Social systems are therefore also natural systems, and as researchers we are self conscious beings who are part of the system, as well as observers of the system. My interest in understanding socio-cultural practices and processes places this study within the realm of human activity systems. Experimental methods from the natural sciences are not useful for dealing with complex human systems (Checkland, 1983; Jackson & Keys, 1984), and a soft approach is therefore more appropriate.

More specifically, I am interested in understanding the dynamics of an IBCS, which is conceptualised as a CAS. In an example of using a CASs framework to understand small enterprises, it is argued that complexity should not be used by directly mapping dynamics on to social systems but rather as a metaphor to better understand the dynamics of the system under investigation (Fuller & Moran, 2001). One of the most important insights of a CAS approach to understanding messy human systems is that they are too complex to be accurately described and understood. What can be done is to leverage different understandings of the conceptual system in order to collectively appreciate the patterns that emerge. Only then can leverage points in the system be identified. The particular characteristics of CASs are therefore important in guiding methodology, as is shown in Table 5.

Table 5 Characteristics of CAS that influence research methodology

Characteristic of CASs	Methodological Implications
Have non-linear interactions within the CAS – this leads to the inherent unpredictability of the system	The researcher must use creativity and improvisation to understand how uncertainty is controlled or leveraged in the system. Focus on small events that lead to large outcomes and large events that lead to small ones.
CASs are nested systems – each is made up of nested subsystems	Requires a multi level analysis. Look for patterns across the levels that indicate fractals. Analyse interactions across levels.
CASs self-organise and have emergent properties – through interactions of the parts each system level is self-organising and shows emergent properties	By looking for the unexpected, self-organisation can be visualised. The informal is the spontaneous and emergent because it is not "created" Describe the patterns that emerge not just the events that occur.
Self-organisation through interaction between parts – it is the interaction between the parts that leads to an understanding of the whole	Information flows show networks of interaction. Must be sensitive to the quality of the connections. By shifting the foreground and background during the research relationships can be viewed. Researcher must be aware of being part of a coevolutionary relationship so is influencing the situation

Soft approaches and SSM has been criticised for failure to fulfil goals of improving social situations. Flood (1990) argues, based on the work of Ulrich (1983) and Churchman (1971), for a need to go beyond the subjectivity of the interpretivist paradigm for systems practice; to move away from relativism and become critical and liberating. More radical and critical approaches are needed to address power structures (M. C. Jackson, 1985). Based on this argument, an epistemological grounding for systems practice developed into critical systems theory, and involved three fundamental commitments; critical awareness, emancipation and methodological pluralism (Midgley, 1996b). Emancipatory outcomes are fostered through dialectical dialogue between participants, thus fitting into a critical theory paradigm. As Robert Flood said of critical systems thinking as quoted in Barton et. al (2004, p. 13) "It's using the systems concept to construct understanding and appreciation, but never to think that we know ultimately what is out there, or indeed to be clear in our minds that we never have comprehensive clear absolute theories". Critical systems theory's commitment to methodological pluralism deserves some attention as it sheds light on the ontological and epistemological assumptions of a systems approach that are relevant to this research.

Complementarity between methodologies within the general field of systems thinking and its application to real life problems has offered an avenue for overcoming paradigmatic crisis. Examples include total system intervention (Flood, 1996), and mutlimethodology (Mingers & Gill, 1997). Instead of choosing between competing paradigms, they make a strength of the ability of systems modalities to combine methodologies that are appropriate for different problem contexts (Jackson & Keys, 1984; Mingers, 2003). This pluralist perspective includes ontological and epistemological pluralism, recognising that there are different systems in existence and for each there is an appropriate epistemology. Mingers (2000) bases this on critical realism, arguing:

> We can move beyond the crude empiricist ontological criterion that to be is to be perceived, and instead adopt the critical realist view that causal efficacy is the proper criterion for existence. In other words, if some structure or system can be shown to have causal effects on the world, then, whether we can perceive it or not, it can be said, putatively to exist. This philosophical stance grants possible reality to both physical and conceptual systems while recognizing the inevitable observer-dependence of our descriptions, and allowing that the social world is inherently different to the natural world. (pp. 749-750)

This view is helpful when using a holistic approach to understanding and improving upon complex situations in the world. It does, however, require the researcher to be critical when making an appropriate selection of methodologies for the task at hand. In the case of this inquiry into the dynamics of Kuna Yala as an IBCS, a systems approach that is not dogmatic about ontological assumptions is thought to be useful. However, when working with conceptual systems, such as soft approaches, having a critical stance that uncovers power structures is necessary, and especially in the current research with indigenous peoples in a post-colonial setting.

4.2.2 Collaboration and Participatory Action Research

The second pillar which I use to build my methodological framework is the aim of contributing to ongoing processes of endogenous development. This study was initially inspired by my experience of working in community development with the Kuna. Philosophically, my approach to community development aligns with a Freirian (1986; 1998) approach that views community development as an emancipatory process in which both the powerless and the powerful engage in reflection and dialogue to transform their social realities. Action research is a methodology that stems from such a philosophical approach. Much like systems thinking, action research is a field that has been developed by practitioners

who are interested in using research to change a problem in a real life situation. It has developed across disciplines and practitioner fields.

One stream of action research that emerged from the disappointment of the failure of scientific approaches to solve real life development problems (and mimics the dissatisfaction with reductionism of systems thinking), and engages directly with Freirian ideas is described by Fals-Borda (2006; 1991; 1987) as developing in Latin America. This approach developed through challenging traditional research by arguing that: people's wisdom must be included in research for it to be useful; that theory and practice must come together through research praxis and; that research carried out collaboratively allows movement beyond subject/object boundaries. Researchers acting in this paradigm become 'organic intellectuals' who engage in collaborative processes. Stringer (2007) refers to a similar approach that he calls community-based action research and points out that the social values that underpin it make the research process democratic, equitable, liberating and enhancing to all participants.

Action research has been used for a wide range of projects in different fields. Henry and McTaggart (1996) identify some of them, including:

- Participatory Action Research - focusing on social transformation in the developing world;
- Critical Action Research - using critical theory to analyse the role of power and language;
- Classroom Action Learning – used by teachers to improve their practice;
- Action Learning/Process Management – used in organisational development and management inquiry;
- Action Science – emphasising reflection on practice as a source of new understanding and improved practice for organisational change.

Other modalities from the field of education are developmental action research (Cardno, 2003) and collaborative action research (Oja & Smulyan, 1989), and both expand on classroom action learning to include aspects beyond teaching, such as administration of education.

Like systems thinking, action research in all its different modalities cannot be classified as relying on one system of beliefs, such as that held within a paradigm, because the different approaches discussed above come from different ontological stances (Gaventa & Cornwall, 2006; Piggot-Irvine & Bartlett, 2008; Raelin, 2009; Thompson & Perry, 2004). One difference in beliefs that has become a central debate in the action research field is the view

held of the relationship between power and knowledge (Gaventa & Cornwall, 2006). This focus on power is akin to the critical systems approach that developed through critique of the soft system approaches. In the following section I discuss why using a critical stance is of paramount importance when working with indigenous knowledge systems.

Commonality among action research approaches can be found in a shared epistemology that strongly criticises positivist knowledge production for embedding and reinforcing the dominant view (Gaventa & Cornwall, 2006, p. 75). Critique of positivist epistemology and reductionism aligns well with the previous discussion of holistic systems thinking. Several attempts have been made at epistemological unity in action research, and I offer a list of characteristics of action research, using a variety of approaches (Cardno, 2003; Fals-Borda, 2006; Flood, 2006; Gaventa & Cornwall, 2006; Herr & Andeson, 2005; Oja & Smulyan, 1989; Piggot-Irvine & Bartlett, 2008; Raelin, 2009; Reason & Bradbury, 2006; Stringer, 2007).

- Uses dialectic epistemology - Recognises that knowledge is contested and can only be gained through a process of interacting with others towards a common goal.
- Uses group experiential learning - Learning is facilitated in a group and is an experiential process of learning through doing.
- Allows tacit knowledge and intuition - The experiential aspect of learning from doing allows tacit knowledge to be used in the process of gaining clarity and knowledge on a particular research problem.
- Uses iterative action and reflection - Uses iterative cycles consisting of phases of planning, acting, observing, and reflecting.
- Is a transformative process - The collaborative and critical nature of inquiry gives it ability to be transformative both for individuals and their social worlds. Participants need to be open to criticism and using self-reflection as a tool to understand and learn about the problem to facilitate the transformative process.
- Learning outcomes are practice based - Because of the focus of producing action and working with real life problem situations, the learning outcomes of action research are focused on how practice is improved upon by it.
- Develops contextualised grounded theory - Unlike positivist research practice, action research works from a loosely defined problem area and in a collaborative manner builds theory that is contextualised by the process.

All of these characteristics of action research make it an appropriate approach to undertaking a study that aims to understand and act upon processes of adaptation and endogenous development, both complex social processes.

4.2.3 Building on the two pillars

The two pillars - use of a CASs framework which requires systems thinking tools, and using a collaborative approach through participatory action research practice - combine to form my research methodology. Systems thinking and action research combine easily, as they share theoretical underpinnings. Action research is an appropriate methodology for inquiring into complexity because it has developed through working with evolving and adapting systems (Phelps & Hase, 2002). Flood (2006) argues that systems thinking is a grounding for participatory action research methodologies, while, for others, action research is a methodology used within a meta framework of systems practice, together with other methodologies such as SSM (Checkland, 1984; Checkland & Holwell, 1998). In this study, systems thinking, and systems approaches that enable inquiry into CASs guide my use of participatory action research methodology.

As I argued above, a non-dogmatic approach to ontology and epistemology is appropriate for the task at hand. This fits well with critical realism, whose proponents argue that philosophically it understands knowledge as being socially constructed and while it is limited by our human ability to understand, it can help us gain an understanding of occurrences in a externally existing world (Benton & Craib, 2001; Bhaskar, 1975; Outhwaite, 1987). Norris (1997) calls this 'subtle realism', a middle road between naïve realism and the total relativism of constructivism. It is not surprising that similarities have been found between a critical realist philosophical ontology and complexity theory's scientific ontology (M. Reed & Harvey, 1992). Critical realism therefore can allow necessary ontological pluralism for using a systems and action research approach to inquire into a linked socio-cultural and bio-physical system, while not negating the need for a critical approach to soft problem analysis as part of critical participatory processes in a post-colonial setting with indigenous peoples. In the following section I look more closely at what tools are required for a critical approach within an indigenous post-colonial setting.

4.3 Inquiry with Indigenous Knowledge Systems

In the previous section I developed my methodological approach, based on ontological and epistemological concerns of the two pillars of this research. In this section, I further

contextualise my approach, focusing on my particular case of conducting collaborative research with indigenous peoples, and illustrate the added layers of methodological consideration required. All social research that recognises subjectivity is a process that requires much self-reflection and awareness on the part of the researcher. Conducting research with indigenous peoples in a post-colonial setting is a process that involves further complexities around epistemologies and ethical conduct. Undertaking research with indigenous peoples as a non-indigenous researcher adds further layers of complexity to practice. Working in collaborative research with indigenous peoples therefore requires reflection on ethics in the context of the indigenous problematic.

The seminal book *Decolonizing Methodologies: Research and Indigenous Peoples* by Linda Tuhiwai Smith (1999) provides insightful guidance for researchers engaging in inquiry with indigenous peoples. The necessary starting point is to situate research with indigenous peoples within an ongoing project of decolonisation. Smith posits that research has been used as a weapon of imperialism and colonialism to subjugate and invalidate indigenous ways of knowing. While not all research of indigenous peoples led to negative impacts, what is highlighted is that the research context of today evolves out of a historical process which at times was subjugating, and that research conducted today can influence the process of decolonisation both positively and negatively. The first is the reason Smith claims that "The word itself 'research' is probably one of the dirtiest words in the indigenous worlds' vocabulary." (Smith, 1999, p. 1), and the second point supports an argument for research with indigenous peoples today to be thought of as "moral projects that respect and reclaim indigenous cultural practices" (Denzin & Lincoln, 2008, p. 15). I consider each of these concerns for my practice in undertaking collaborative research with the Kuna.

4.3.1 Researcher positionality

Doing research in the context of decolonisation requires particular attention to the positionality of the researcher. Having a historical appreciation for processes and patterns is an important part of understanding a current context and is implicit in using a complexity approach to human systems (Tsoukas, 1998). In this study, I have started from a historical account of Kuna Yala, to build a picture of contemporary Kuna Yala within ongoing processes of change, as illustrated in Chapter 3. Building on this context is a need for awareness of my position as a researcher and the ways in which I might influence ongoing processes negatively or positively. Using Herr and Anderson's (2005, p. 31) continuum of positionality of researchers in action research, I would describe myself as moving between a

position of reciprocal collaboration in an insider-outsider team at times (such as during work with the reflection group), and an outsider working in collaboration with insiders at other times (working to support local actions and using qualitative research methods).

The foreign researcher-Kuna relationship translates to a *mergi-dule* or *dule-mergi* relationship (*mergi* means American or European foreigner and *dule* in this context refers to the Kuna as indigenous). It is a shared distinction of Otherness that cannot be forgotten; I am a *mergi* to the Kuna, and the Kuna distinguish themselves from others through calling themselves *dules*. However, due to my previous experience working in Kuna Yala, living for extended periods of time in the two communities that became my field sites, and previously working with many leaders with whom I engaged in reflection and discussion, the particular identity or position I held was often not simply as a *mergi*, but as 'Marina'. The notion of 'legitimate peripheral participant' (Lave & Wenger, 1991) describes a process of learning through situated activity within communities of practice. At times during the research I was asked to support certain actions, such as helping to write a project proposal, or translating documents for leaders, illustrating that at times I continued to be viewed as a development practitioner by some participants. My years of experience working in development in Kuna Yala led to my becoming a 'legitimate peripheral participant' in the processes that are the focus of the research; understanding and contributing to endogenous development, which support the decolonising efforts of the Kuna.

Nevertheless, at times I was placed in the 'default' *mergi* researcher position, particularly when engaging with people I did not previously know. This required the ability to engage in what Fine (1994, p. 72) terms 'working the hyphen': "Working the hyphen means creating occasion for researchers and informants to discuss what is, and what is not, 'happening between', within the negotiated relations of whose story is being told, why, to whom, with what interpretation, and whose story is being shadowed, why, for whom, and with what consequences". While the 'informants' in the case were participants in a process of inquiry, it does not mean that the hyphen disappears, because as Jones and Jenkins (2008) argue, it cannot be dissolved or erased, only recognised and worked within. The distinction must remain if the Kuna are to assert their position as indigenous peoples - it is part of their struggle for self-determination.

4.3.2 Practicing mindfulness

My ambiguous position as insider/outsider and development worker/researcher described above requires a mindful research practice. One way of describing the practice of working in

a mindful way in a decolonisation context is what some call multilogicality (Kincheloe & Steinberg, 2008). Multilogicality is "an effort to act educationally and politically on the calls of diversity and justice" (Kincheloe & Steinberg, 2008, p. 151) and works from a multicultural space, questioning oppressive aspects of the status quo to support the self-determination of indigenous peoples. Some have developed a pan-indigenous approach to research practice (e.g. Meyer, 2008), which emphasizes a spiritual connection through which one can be mindful of one's practice and its outcomes in multilogicality. This approach is informative to my practice. However, being mindful is an experiential approach to research, and cannot ensure that one is fully aware of how one is influencing a process of decolonisation, precisely because of our subjectivity. A standard approach to ensuring that research does not lead to negative consequences for participants is through ensuring ethical conduct. I now turn to a discussion of what an ethical approach to research with indigenous peoples entails and what I have done to ensure that this research has been conducted ethically.

4.3.3   4.3.3 Ethical research practice

Concerns for ensuring the ethical conduct of researchers have not always been an integral part of developing methodologies. The claims of indigenous peoples that research was used to help the imperialist cause are a testament to the lack of control over research methodology during colonial years. Since World War II, with the revelation of medical experiments that were conducted in concentration camps, science was revealed as not intrinsically neutral and beneficial to mankind (Punch, 1994). Through attempting to control biomedical research a more general interest in how to conduct research in an ethical manner has expanded to other fields.

Although biomedical research is very different in its scope, nature and methods than qualitative collaborative research, it is still the underlying framework that drives institutionalised ethical processes, such as those found at universities today (Homan, 1991; Israel & Hay, 2006). These processes tend to use general guiding principles, for example, those used by the Lincoln University Human Ethics Committee that reviews all research proposals are: informed consent; respect for rights of privacy and confidentiality; limitation of deception and minimisation of risk (Lincoln University Human Ethics Committee, 2009). As Punch (1994) points out, principles such as informed consent and confidentiality are problematic for qualitative researchers who are conducting participatory forms of research such as action research who do not recognise 'subjects' but participants, and where a process of trust and engagement is a platform on which research is carried out. For researchers in the

field, having a participant sign a consent form can be detrimental to the established relationship of trust. In these situations ethical wrongs and rights become blurred.

Ethical codes and principles are used as a way of controlling the conduct of researchers, and although they fit into the principlist approach (where a principle is seen as binding unless it conflicts with another principle) they are based on Western, individualistic views of moral and ethical behaviour (Israel & Hay, 2006). As Smith-Morris (2007) argues, ethics of individual autonomy are inadequate and inappropriate where community self-determination is at stake. Indigenous peoples have collective processes that require a different ethical approach. If research is to further decolonisation and support indigenous peoples' rights then it needs to add to the use of ethics committees and Western codes of conduct and committee processes, a more appropriate local contextualised indigenous ethics process. Smith (1999, p. 117) sets out an agenda for indigenous research that can be used to support movement through survival, recovery, development and finally self-determination. This agenda has four directions of research - healing, decolonization, transformation and mobilization. Effectively, we can think of these processes as part of the indigenous reality of today and, as a researcher, it is part of my moral obligation not only to ensure that I do not stand in the way of these ongoing indigenous projects, but where possible, that I support and enhance them.

In order to ensure that my research could contribute to the ongoing decolonisation of the Kuna, I required tools to help me be mindful in my practice. Perhaps the most appropriate tool for supporting mindful research practice with indigenous peoples is the *International Society of Ethnobiology Code of Ethics* (International Society of Ethnobiology, 2006). It is the result of work set in motion by Darrell Posey during the First Congress of Ethnobiology held in Belem, Brazil in 1988. In 2008, the Society became the first professional society to take up the challenge of the 2007 United Nations Declaration on the Rights of Indigenous Peoples and is therefore the most advanced and appropriate for working with indigenous communities. It uses 17 principles including self-determination, traditional guardianship, supporting indigenous inquiry and respect, among others. Beyond the principles, the *ISE Code of Ethics* (International Society of Ethnobiology, 2006, p. 1) states that "The fundamental value underlying the Code of Ethics is the concept of mindfulness – a continual willingness to evaluate one's own understandings, actions, and responsibilities to others." I have used the code during the research period as a tool to help me be mindful.

There are examples of indigenous peoples developing their own systems for ensuring ethical conduct of researchers undertaking research with or about them. These indigenous approaches bring together foreign, scientific and indigenous principles. They have mainly

developed in first world countries, such as the case of the Mi'kmaw Ethics Watch that oversees research protocols for their people in Canada (Battiste, 2008), the research principles of the Tapirisat Inuit of Canada (Posey, 1996), and guidelines used by some Maori of Aotearoa/New Zealand (Te Awekotuku, 1991). There are, however, few examples of indigenous peoples outside the first world developing their own processes for ensuring ethical research. The efforts and success of the Kuna in this area is a testament to the self-determination and the level of autonomy they maintain. Posey (1996) reports that the Kuna have taken giant steps in moving towards community controlled research, where the objectives and methodologies are decided upon by the indigenous peoples themselves. The example he cites is the development of a manual of scientific monitoring and cooperation by a collaborative project between researchers and the Kuna (PEMASKY project) (Archibold & Daley, 1993). This initial progress in the field of ethical guidelines for research in Kuna Yala has, over the years, been developed further, and the recently approved Protocol for Research in Kuna Traditional Medicine and Biodiversity (IIDKY, 2008) is one outcome. The main efforts of the Kuna to produce guidelines for controlling foreign research have been focused on protection against extraction of knowledge about biodiversity as a reaction to the constant threat of 'bioprospecting' in indigenous territories.

In other areas of research, the Kuna may not have written guidelines, but this by no means translates into a lack of control. The Kuna Estatuto (legislation) has an entire chapter dedicated to the management of projects in the Comarca, and includes research (CGK, 2009). Under this legislation, any researcher wishing to conduct research in Kuna Yala must present a full written proposal to IIDKY (The Kuna research and development institute, the CGK NGO). The proposal is reviewed by technical experts from the field of the proposed research, and for proposals that are thought to have no negative impacts, a recommendation is made to the CGK to grant the researcher permission. While going through this process in Kuna Yala, during the review stage, I was also required to explain in person the research to the Executive Board of the CGK made up of the high chiefs and their aids. The dialogue allowed for modifications to be made to the research proposal and represents a living process for influencing the research design and implementation strategy. The approval gained in writing (shown in Appendix B) recognises that the research proposal has been screened and has passed Kuna ethical standards. This, however, is not the final step in the process. The approval letter is effectively a 'visa' that allows entry for the researcher to then approach communities and individuals. It does not override the local community ethics processes. The

CGCK also gave me permission to conduct the research, with one condition: that a copy of all photographic material be provided at the end of the research.

Each community has its own ethics screening and research approval processes. I went through the process in Ukupseni, a large community where research has previously been conducted, and in Colebir, a small community with no previous experience of research. The local processes were based on participatory meetings with the communities that allowed open dialogue and debate over the application of community rules for research. Once the proposed research and methods were approved by the community, I was then given approval to interact with individuals and groups in the community. The community process does not override individual consent processes, but rather, ensures that collectivity is respected. Informed consent was attained from all individuals who participated directly in the research.

The one condition I was given in both communities was that I must return to the community to present the research and provide a copy of the dissertation for them. In both communities the use of a digital recorder was allowed to be decided by individual participants. Some ambiguity arose during the field work about whether public meetings could be recorded, and I only recorded meetings with a designated facilitator who could give permission. All other public forums were not recorded. Kuna communities are 'tight knit' social worlds, and as a foreigner one is often in the spotlight, creating a social control mechanism that provides feedback for the researcher. My previous experience working in Kuna Yala and my proficiency in the Kuna language helped me to be more aware of basic social courtesy and how to act ethically. For example, when speaking with ritual specialists, I only recorded what is not considered knowledge or information on spiritual matters that must be protected.

In summary, the research presented in this thesis was conducted in the most ethical manner possible, through subjecting the proposal to multiple levels of ethical screening. The levels included the Lincoln University Human Ethics Committee, the Kuna General Congresses, Ukupseni and Colebir communities and individual consent from direct participants. On top of these processes, I used the *ISE Code of Ethics* as a guiding tool during field work to support mindful practice. Upon completion of the field work period I held a meeting with leaders of the CGK and CGCK where I formally presented a written report detailing the activities I had participated in and copies of all digital photographs taken.

Beyond the process described in this section, in April 2010 I returned to Panama and shared preliminary findings of the research with those involved. I held a meeting with CGK and CGCK leaders, conducted a workshop with the main group of collaborators, and

presented preliminary findings to Ukupseni and Colebir. The main aim of these meetings and activities was to discuss where research findings indicate leverage points in the system for improving endogenous development, and allowing further collective thinking around the key emergent themes. However, the final task of the ethical research process is the presentation of this thesis formally back to the Kuna, in Ukupseni and Colebir and to the Kuna General Congress which will be accomplished upon completion of the PhD process.

4.4 Ensuring Quality Research

4.4.1 Validity in Participatory Action Research

Participatory action research is not a mainstream approach to academic research, with critics claiming that it is conducted by practitioners in a manner less rigorous than in other forms of social research (McTaggart, 1998). It is generally held that rigorous research generates valid knowledge through showing how established validity criteria are met. For qualitative research Lincoln and Guba (1985) dispute the transfer of validity criteria from positivist approaches. They assert that truth value, applicability, consistency and neutrality are inappropriate, and propose they be replaced by credibility, transferability, dependability and confirmability. They later added 'authenticity' to the criteria that are appropriate to be used for a assessing the rigour and quality of constructivist research (Guba & Lincoln, 1994). For action research, these criteria continue to be problematic as they cannot fully embrace the contextualised nature of problem solving and the social transformation aims of action research. As Greenwood and Levin (1998, p. 255) point out "The orthodox social science community believes that credibility is created through generalizing and universalizing propositions and AR [Action Research] generalizes through cases from which lessons of broader relevance are learned."

In agreement with Greenwood and Levin's (1998) definition of credibility as the arguments and the processes necessary for achieving the goal of making someone trust research results, in action research, credibility and validity should be defined in a manner that is appropriate to its practice and end goals. One approach taken is to separate the action research endeavour into two spheres of influence (Thompson & Perry, 2004). The core action research project is conducted with the group, in the field, and its goal is to bring positive changes to their social world, and the general project is the academic report that is generated from it. Through separating the two, they argue, different paradigmatic approaches can be used, and different claims to validity should be made for each. But this separation is

problematic, because it sees the core project as a non-academic process, negating a participatory approach as valid for academic research. A more positive approach, that recognises validity in all aspects of action research is that developed by Reason and Bradbury (2006) defining quality in action research in a way that is consistent with a participatory approach to knowledge creation for social change. They develop five aspects for this purpose:

1. Quality as Relational Praxis – referring to the quality of engagement of participants during the research process;

2. Quality as Reflexive-Practical Outcome – referring to the practical outcome of the process;

3. Quality as Plurality of Knowledge – referring to methodological appropriateness and ability to extend ways of knowing through it;

4. Quality as Engaging in Significant Work – referring to the appropriateness of the topic and its ability to bring emancipatory change;

5. Quality as Emergent Inquiry toward Enduring Consequence –referring to the long term consequences that the project should have.

The five aspects can be summarised into three key areas of the action research project that require attention in validity claims. These are: credibility of the research practice, emancipatory intent and outcomes, and presentation of the learning. Similar criteria are used by Herr and Anderson (2005): democratic validity, catalytic validity and dialogic validity. Each one is discussed specifically for this research project.

Facilitation of dialectical learning

The ability of the researcher to facilitate dialectical learning is pivotal in ensuring that the research practice is credible. Some of the skills required by the researcher include being present and open, being able to reframe constantly, being emotionally competent to deal with often difficult group learning and being able to facilitate other people's learning, among others (Heron & Reason, 2006). One of the reasons I decided to use a participatory action research approach is my previous experience in collaborative projects with the Kuna. Section 4.5 outlining the research process provides further evidence of how my skills played out in practice. Also important for ensuring a credible learning process is the quality of group reflection, which is dependent upon the ability and willingness of participants to engage in reflection and analysis. Included in the research process section are the measures that were taken to promote quality in reflection.

Emancipatory practice

The second area which refers to the emancipatory nature of action research is the most challenging for academic action researchers. The challenges come from the 'messy' nature of action research and the lack of control the researcher has over collaborative iterative processes. Messiness in action research is important, as it is precisely through divergence from the planned research process and use of creativity that valuable learning occurs (Cook, 1998). Waterman (1998, p. 104) argues that "The validity of action research projects does not reside in their degree to effect change, but in their attempt to improve people's lives". I am not suggesting that all that is required is good intentions, but rather, that the awareness of a moral responsibility held by the researcher enacted through practice helps render the process valid. In the previous section on research ethics I have discussed the moral aspect of working with indigenous peoples in the field of development and how I developed a mindful research practice for this purpose. The following section will further illustrate how the intent translated into practice.

Presentation of collective learning

The final area concerns how the researcher presents the collaborative learning that is an outcome of the action research project. Action research projects are unique, contextualised experiences of learning with a group on a particular problem. The learning is therefore very particular to each case. Instead of presenting results as generalised theory, the action researcher must focus on recoverability of the process (Checkland & Holwell, 1998; McNiff & Whitehead, 2009). In presenting contextualised results of research, it is important that the process and specifics that led to the result in the context is clearly identified. In the following sections, the research process is described, ensuring transparency of the process and illustrating the contextualisation of collaborative learning.

4.4.2 Evaluating interdisciplinary research

The points discussed above, concerning how research practice and findings from PAR should be evaluated, are also relevant to the interdisciplinary nature of this study. The complex systems approach used to understand real life 'messy' problems is underpinned by an appreciation for multiplicity in epistemologies and using different vantage points to make

95

sense of a complex situation. Moreover, it has been argued that complexity and interdisciplinarity both share a common history of emerging as 'new' approaches for dealing with complex situations (Klein, 2004). In this sense, interdisciplinarity refers to using a multiplicity of disciplinary perspectives within a research endeavour. Within this general approach, several types of interdisciplinarity are recognised. A common way of differentiating between them is by the degree of synthesis between disciplines that they call for (e.g., Klein, 1996; Lattuca, 2001). They form a continuum, from multidisciplinary endeavours that include teams of different disciplinary experts but do not seek synthesis of perspectives, to transdisciplinary research in which a shared framework is used for synthesizing across perspectives. This study takes an approach that is closer to the transdisciplinary mode, addressing complex societal concerns through bringing together multiple ways of knowing (beyond just academic disciplines), building holistic understanding (Hadorn, Bradley, Poh, & Rist, 2006; Lawrence & Despres, 2004).

Much of the literature on interdisciplinarity focuses on the opportunities and challenges it brings to teams that work across academic disciplines or within research centres (e.g. Jacobs & Frickel, 2009). Critique of interdisciplinarity illustrates two major barriers to its implementation. First, epistemic barriers are the result of disciplines traditionally developing their own theories and jargon which makes communication across them difficult (Robinson, 2008; Strang, 2009). Second, institutional and administrative barriers perpetuate the disciplinary silos of university departments and academic careers continue to promote specialisation (Abbott, 2001). In the case of this study, epistemic barriers were overcome through use of a common framework for facilitation of reflection on a particular problem to leverage different viewpoints. Undertaking the research within an interdisciplinary faculty (the Faculty of Environment, Society and Design) minimised difficulties that PhD students undertaking interdisciplinary research face within discipline based departments, such as finding appropriate supervision or an appropriate intellectual community (Golde & Gallagher, 1999).

Much less is reported, however, of the challenges of individually undertaking and writing interdisciplinary research, and how its quality may be judged, compared to disciplinary focused research. Lamont et al. (2006) conducted a study of how interdisciplinary proposals are evaluated by multidisciplinary panels. Their results highlight one of the major tensions in this type of study, and one that has been a central concern of mine in writing this thesis; there is an inherent tension between depth of analysis and theory building within specific disciplines and breadth of phenomena studied and literature used. Their study found that

interdisciplinary proposals are considered by some as too ambitious in their use of multiple disciplines, which often span beyond the expertise of the researcher. Conversely, the breadth of interdisciplinarity is thought to create potential for new innovative approaches which is considered positive. This creates a paradox in how interdisciplinary research is evaluated.

It is clear that research that attempts to understand complex problems from a holistic systems perspective is not well placed to provide depth of analysis and theoretical development in any one particular discipline, and this has not been the intention in this thesis. The literature review provided in Chapter 2 covers several areas of theory that have been combined in crafting my approach. I began the study with a broad picture of the processes I was aiming to understand and through the research steps inquiry became more focused, as specific areas of practice emerged as important. In the chapters that present the analyses and results into the specific areas that emerged as important I provide a short review of relevant literature that helps to frame each discussion. These reviews are not intended as deep and thorough literature reviews of how a phenomenon is understood through a specialised field, such as leadership theories, for example, but rather, are used to help explain what emerged from the process. I have taken care to present an accurate picture of how a particular discipline or area of theory understands the phenomena I engage with. In Chapter 9, a holistic analysis and synthesis of the research findings leads to contributions to theory. It is not surprising that the theoretical contributions are made into areas that are inter- or transdisciplinary themselves.

4.5 The Research Process

In participatory action research, knowledge is generated through a collaborative, iterative research process. Most action researchers claim that several iterations of a cyclical learning process are conducted systematically, generating knowledge through reflection on a planned action that has been taken (Reason & Bradbury, 2006; Stringer, 2007). Each cycle contains four stages as shown in Figure 4.
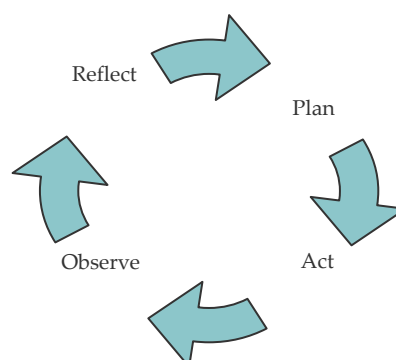
Figure 4 The generic action research cycle

The cycle begins with planning of an action to be taken in the process being managed or analysed. The action is then taken, and a stage of observation follows. Finally, a stage of reflection is undertaken, in which collective reflection on the occurred action and its outcomes produces knowledge. The new knowledge is fed into the following cycle of planned action.

The methods used to facilitate reflection in action research cycles depend upon the positionality of the researcher. In Section 4.3.1 on positionality, I placed myself between working as part of an outsider-insider team and working as an outsider in collaboration with insiders. Herr and Anderson (2005, pp. 36-46) further discuss the difference between positionalities through examples of particular action research projects, illustrating that the context within which action research is practiced requires the researcher to hold different positions. The researcher may be conducting action research within their own professional group (as an insider), through a mandate to support an insider group (as a consultant), or through initiating a research process from without. In my case, I was an outsider initiating the research process with no formal mandate. The group with which the iterative action research process was undertaken, however, was an established forum for reflection, so I became an outsider participating in reciprocal collaboration with an insider group.

Figure 5 illustrates the research process starting from the time I arrived in Panama (November 2007) to the beginning of the thesis writing process (October 2008). The central organising process of the research through work with the reflection group guided conceptual development throughout the iterations of reflection cycles. In the following chapter (Chapter 5) I provide a detailed account of how the reflection group was set up, the process used to facilitate collaborative reflection and learning, and how this supported conceptual development and definition of themes that guided parallel, in-depth analysis into Kuna practice. Figure 5 is intended to clarify how the process holds together for holistic analysis, and to illustrate how the chapters that follow emerged from the process.

Starting from left to right, the arrow shown at the bottom indicates the time frame from November 2007 to October 2008. Three reflection cycles are shown and in each the first step is found in the top right hand corner (the numbers in the blue squares indicate the order of the

steps from 1 - 12). Each of these steps is detailed further to provide an overview of the entire process:

1. Upon arrival in Panama, the research proposal was reviewed through conversations with the CGK, and appropriate methods were designed.

2. The methods included participation in development projects occurring in the Comarca. With each potential project my involvement was discussed during a scoping exercise, and a preliminary plan of action was made. The reflection group that would collaborate during the whole process was identified and set up.

3. After the first months of scoping and testing of methods I developed a mind map of my thinking, to bring to the discussion with the reflection group.

4. The first formal workshop with the reflection group was held in Panama City.

5. Based on the discussions in the workshop with the reflection group, a group mind map was developed to feed into planning the next cycle of reflection.

6. Field work was conducted on the various projects and in communities.

7. During the field work period reflection occurred on emergent findings with individuals from the reflection group. A formal workshop was not able to be conducted for this cycle.

8. Further conceptual development from the findings of the cycle led to further development of the group mind map outlining areas where further work was required (Chapter 5 includes a detailed account of this process).

9. Field work using qualitative methods was conducted on the practices that had emerged as important; this occurred both with the projects and in communities.

10. All of the reflections were brought together to plan the final workshop to be conducted with the reflection group.

11. The final workshop with the reflection group was held.

12. Analysis and writing of thesis began.

The steps shown illustrate that reflection cycles did not conform to a clear process that some action research proponents describe (Stringer, 2007). At times, several steps were occurring at once while, at others, some steps were unable to be performed. This 'messiness' in the process has been described by other action researchers (Cook, 1998; Mellor, 2001).

1st Reflection Cycle

4

Reflection
Group
Workshop

1

Scoping
methods
& scene

Develop
1st map

3

Testing
methods

2

Nov 07 – March 08

2nd Reflection Cycle

8

Develop
3rd map

5

Develop
2nd map

Reflection
with
individuals

7

Conduct
Field
Work

6

March 08 – May 08

3rd Reflection Cycle

12

Analysis
Began

9

Field
Work on
Practices

Reflection
Group
Workshop

11

Brought
all
together

10

June 08 – Oct 08

Figure 5 The research process

4.5.1 Development projects as vehicles for directed reflection

As well as using the reflection group process for facilitating the three cycles of reflection (discussed at length in Chapter 5), I also participated in specific projects that were useful vehicles for reflection on ongoing development initiatives and practices. These emerged as potential projects for participation through discussions with the CGK and leaders. Participating in ongoing development projects, however, is full of uncertainties, and required that I maintain a flexible approach. Moreover, as these were not the main action research projects but, rather, supplementary forums for reflection, the intention was not to follow the projects closely but instead to engage with them at times that would be useful for illustrating particular moments or aspects of managing development initiatives in Kuna Yala. The following four ongoing development initiatives in Kuna Yala offered opportunity for reflection on aspects of Kuna adaptive capacity and development practice.

1. Bilingual Education Project – The CGK and CGCK managed Bilingual Education Project offered an opportunity to analyse, from the Kuna perspective, cultural practices of learning that are part of promoting sustainable development. Due to an external project evaluation conducted while I was in the field, which reduced project activities to a minimum, I was only able to observe several project activities. Reflection occurred through meetings with personnel individually, and discussions with project participants, such as teachers and other education professionals in communities.

2. CGK Agricultural Production Committee – As a CGK initiative, performing its duties with no external funding, it provided an opportunity to analyse how one of the most important vehicles for development and sources of identity of the Kuna is managed by internal development processes; connection with nature through agricultural production and the current difficulty of changing practices and reduced production. During the field work period I engaged in conversations with the committee members and reflected upon the committee work through CGK process.

3. NGO managed Marine Resource Management Project – The project managed by a Kuna NGO, Balu Wala provided opportunity for reflecting on how the Kuna have historically and, today, continue to adapt to living in a marine environment. The project is active in Ukupseni, where I facilitated discussions with

community members involved in the project. I also participated in a workshop with leaders from all the communities, which allowed me to view opportunities for activities that sought to foster epistemological bridge building between traditional Kuna interpretations of marine biodiversity and management and scientifically based management.

4. Leadership Development – The CGCK has been in the process of implementing a Comarca wide initiative to establish a leadership development school for some time now. This project has no direct funding other than the support of communities and the CGK. The lack of funding and project 'activities' made this a particularly difficult project to engage with. I conducted interviews with leaders of the project and was present at meetings in which the initiative was discussed.

4.5.2 Methods for in-depth analysis

Through the reflection process described in Figure 5, three themes emerged as important for understanding Kuna socio-cultural practices that support adaptive capacity (see Chapter 5 for details). These themes became the focus of in-depth analysis of Kuna practice, which are discussed in Chapters 6, 7 and 8 of the thesis. As with all qualitative methods, as the researcher, I became the vehicle for analysis. Interaction occurred through both spoken and unspoken means. It is therefore appropriate that I note how language was managed during these encounters to ensure understanding. I am fluent in written and spoken Spanish and proficient in spoken *dulegaya*. Conversations with Spanish speaking Kuna were conducted in Spanish when possible. Most interactions in communities occurred in *dulegaya*. Some of the participants, such as specialist leaders, use a specialised version of *dulegaya* that I am familiar with but not proficient in. When I was interacting with such leaders I relied on the help of interpreters to ensure my understanding through common *dulegaya* and/or Spanish. Depending on the situation and context of the interactions the interpreter might have been a relative or friend who was willing to help out. I did not employ interpreters for this purpose. Leaders are used to conversing with the help of an interpreter, both formally and informally. All information gathered that required interpretation of technical *dulegaya* was triangulated through conversations with the reflection group to ensure full understanding.

It is important to note that a significant tool that I used during application of these methods is my previous knowledge and experience in Kuna Yala. Understanding and deciding on the most appropriate way to engage in conversation or practice was informed largely by my intuitions as someone who has lived in Ukupseni and Colebir before. While I was aware of my actions and used my mindful practice to ensure that I was both being rigorous in my methodology and ethically sound, acting on intuition is a big part of participatory research which hinges upon human relations.

Participant Observation

During my time doing field work in Panama, 165 days were spent in the Comarca and most of them in the two field sites, Ukupseni and Colebir, where community processes were studied. Participant observation was used in the communities and during meetings attended such as the CGK Comarca-wide meetings and activities of the development projects mentioned above.

Observation has long been a method used in social inquiry, and in the field of anthropology it is used extensively when investigating social practice in real life community situations (Adler & Adler, 1994; Hume, 2005). Participant observation has developed into a humanistic methodology, based on messy, complicated and often emotionally fraught interactions during research, and as such was appropriate for the more specific community analysis required here. While observation may be used because of its non-intrusive nature, here it was not used covertly. When working in indigenous communities choosing to use a method that keeps one 'under the radar' promotes research that undermines the process of self-determination. In my case, approval for conducting the research was granted by the communities and thus the collective was aware of my position as a researcher. While there are no guarantees that every person in the community was fully aware of what this meant, in small 'tightly knit' communities it is unlikely that many were entirely unaware that my presence in the community was related to conducting research. Since I had previously lived and worked in the two field sites and also visited, it is possible that at times some community members assumed I was simply visiting. When I became involved in collective instances of particular interest to the research, such as participating in or observing rituals, I made sure that facilitators were aware of my intention of using the experience in my research.

Typologies of participant observation used historically relate to the scale or amount of involvement the researcher, as observer, has in the process, and this stems from the original use of a positivist paradigm in social research in which the researcher is external to the process being studied. With the growth of qualitative social research, observation has progressed to more participatory approaches. An example of a typology that demonstrates this is Gold's (1958) four modes of observation; complete participant, participant as observer, observer as participant and complete observer. In my case, participant as observer and observer as participant are both categories that fit with some of the research context I found myself in. More accurately, using Adler and Adler's (1987) typology, my role as observer is best described as moving between an active-member-researcher and a peripheral-member-researcher. At times I was directly involved in an activity I was simultaneously observing, for example when working with Colebir to develop a project proposal, while at other times I was not directly involved, such as participating in project workshops as an observer.

When it was possible and appropriate I recorded my thoughts during observation in a field notebook and, when this was not possible, I recorded notes as soon as possible afterwards (See page of field notebook shown in Appendix C). I took photographs (some are included in this thesis) and digitally recorded events or conversations when it was appropriate and permission was given by the participants. In general, recording conversations was rare. During the initial stages of the research I focused observation on general processes and patterns, for example through daily meetings in *onmaked nega* and meetings of interest groups in communities. As the process continued, the focus of observation became more and more specific. In community meetings, for example, my observation emphasis was on how dialogue was facilitated, the difference in opinion presented and how decisions were made. Participant observation of community activities and processes was facilitated by my established relationships in the communities and my previous participation in community life, which opened doors for participation and observation of events and processes such as rituals. Focusing on specific practices during the research process led to conducting interviews with key informants to gain more insight into an emerging theory, and to triangulate findings from other methods (reflection group discussions, participant observation and participatory workshops).

Interviews

Interviews are commonly used together with participant observation in qualitative research (Fontana & Frey, 1994; Patton, 2002). Much like the role I played as a participant observer, the interview method varied depending on the context of the interaction. Many informal conversations that I engaged in during the field work period could be classified as informal, unstructured interviews. In these instances I did not formally take notes or record the interview but recorded my reflections of the conversation in a field notebook as soon as possible after the event. Semi-structured interviews were used to triangulate or further gain insight into specific topics, for example with ritual specialists in both Ukupseni and Colebir and development project leaders. Some of these interviews were digitally recorded, when permission was granted and it was appropriate. In a few cases participants did not wish the conversation to be recorded, and I therefore only took notes.

In total, 15 interviews were recorded. In some cases interviews occurred while accompanying participants to the field to collect medicine where recording and note taking was impossible. In these cases I took notes as soon as possible after the event. For semi-structured interviews with selected key respondents, I used a question guide (example shown in Appendix D) to help facilitate the conversation. Open ended questions were used and effort was made not to lead the respondent while ensuring a natural comfortable flow to the conversation.

4.6 Building Conceptual Clarity

As already discussed in Section 4.4 on validity, the collaborative learning that is a product of PAR does not fit into hypothesis testing or generalised theory development. Learning from collaborative research leads to a continuous process of gaining conceptual clarity of a complex situation, and building theories of how to improve upon it. Theoretical development in PAR is more challenging than other social research approaches which aim exclusively to contribute to theory (Huxham, 2003).

Dick (2003; 2007) argues that this weakness of action research can be compensated by complementing it with a grounded theory approach to theoretical development. There are, however, few reported examples where the two have been combined. In one example, Wild River (2005) uses a combination of methods - author's own reflections on professional role, interviews with practitioners, case study

methods, comparative analysis, action oriented work programmes – generating data over four reflection cycles. Qualitative data is analysed by the author to produce theories that fit the data. In this case, action research is a meta-methodology (Dick, 2007), and grounded theory guides theoretical development through the researcher's analysis of the data. This use of grounded theory is more akin to use of flexible guidelines for 'constructing' a grounded theory (Charmaz, 2006, p. 9) rather than the original version of grounded theory from social research (Glaser, 2001; Strauss & Corbin, 1998) which is more prescriptive. While flexible, the approach none the less continues to separate analysis and theory development from the collaborative reflection and action cycles. While this may make for a more 'rigorous' theoretical development approach, I believe it can potentially undermine the collaborative intentions of the research.

Another example of theoretical development through action research, perhaps the most explicit, is provided by Huxham (2003). Similar to the above example, several types of data were collected through discussions, interviews, workshops etc., but unlike the above example, the conceptual development that emerged was a collaborative process which involved much reflection and discussion with the participants. This is similar to the approach that I used to organise conceptual development that is reported in this thesis.

The reflection group process guided three iterations of reflection, during which a collaborative process of dialogue and reflection around Kuna adaptive capacity and development processes enabled conceptual development of the complex issue. Data that I collected to feed into the reflection process were in the form of field notes and some recorded interviews. While in the field I analysed the data through careful reading and re-reading of notes and transcripts of recorded conversations. For example, one theme that emerged was 'use of Bab Igar as a tool for reflection'. Interviews were conducted with key informants such as leaders, and they were transcribed and analysed for consistencies and differences. For example, commonalities were found in how training was experienced, while differences related to the different types of leadership training they received. This was fed back into the reflection process, and participants added their own thoughts, reflections and interpretations.

What was most important for organising conceptual development was use of visualisation techniques to build clarity and foster discussion on emerging themes,

sometimes leading into new areas. This approach is similar to that taken by McKay and Marshall (2005) in which mapping ideas and relationships between them helped to build conceptual clarity that then leads to theories for action. The reflection group process and the tools used to facilitate conceptual development throughout the research process are described in the following chapter.

4.7 Summary

In this chapter I have developed the methodological framework used for the research that is presented in the thesis, based on two pillars: a CASs theoretical framework and, a commitment to collaborative practice. Systems thinking and action research were brought together to build the methodological framework. Its ontological and epistemological assumptions were discussed, with a multiple ontological and epistemological approach found to be coherent with this project. In recognising multiple epistemologies, the implications of working with indigenous peoples in a process of decolonisation were discussed and considerations for ethical conduct presented.

Next, in keeping with the action research framework, the validity and credibility of this research was discussed. I also briefly discussed the difficulties of conducting and adequately presenting interdisciplinary research. The most important aspect of an action research thesis is to provide a recoverable process through which the practice involved in producing contextualised collaborative learning can be appreciated, and conceptual development is recognised as an emergent feature.

Then, the research process was explicated, illustrating that three iterations of reflection were undertaken with a collaborative reflection group, and was used as the organising process. Specific methods that were used to complement the reflection group were discussed, and various opportunities for reflecting on specific development initiatives were also described. Finally, the approach taken to conceptual development that emerges out of the process was discussed.

Chapter 5

Building Conceptual Clarity through Collective Reflection

Only human beings are praxis *– the praxis which, as the reflection and action which truly transform reality, is the source of knowledge and creation.* (Freire, 1986, pp. 100-101)

5.1 Introduction

In the preceding chapter, the research methodology was developed from systems thinking and action research. Effort was made to illustrate the research process that was used, as recoverability of process is important for validity claims of action research findings (McNiff & Whitehead, 2009). This is further elaborated in this chapter, through a description of the reflection group process that became the backbone of my methodology and the central organizing process for collective learning and building conceptual clarity.

The chapter begins by describing how the reflection group was set up and the tools that I used to build collective understanding around the key research questions. The rest of the chapter describes the process used to facilitate three iterations of reflection. While it is presented in a chronological, step by step manner in this chapter for the sake of clarity, conceptual development was continuously emerging throughout the process. To highlight the developmental process, three moments of conceptual development are illustrated diagrammatically, as snap shots of a collective mind map taken at a particular moment in the process. Throughout the narrative of the reflection group story, the key emergent findings that led to shifting of conceptual development based on in-depth inquiry and ongoing conversations are indicated.

At the end of the chapter, I present the three key areas of practice that emerged from the process, providing a transition into the following three chapters of the thesis. In the synthesis chapter (Chapter 9), holistic understanding emerged from bringing together all of the parts of the thesis (collective learning with the reflection group and findings from in-depth inquiry into key practices). This chapter, therefore, contains details of my research process and my research findings.

5.2 Developing a Reflection Group

5.2.1 Recruiting a reflection group

Figure 5 (page 100) illustrates the three reflection cycles and the methodological steps that were taken within them during my time in the field. The first steps involved coordination with CGK leaders and the communities, beginning with requesting formal permission to undertake the research in the Comarca. During the coordination phase, the scope of the study was adjusted to the reality of the field work situation. One of the first adjustments was made while setting up the group with which I would conduct the iterative cycles of reflection. Initially I had thought it would be ideal to undertake the reflection process with CGK leaders, but it soon became apparent that the high work load of formal leaders would be a barrier to their direct and full participation in the research endeavour.

Beyond the practical issue of availability, I also had concerns regarding the capacity of members to support collective learning. Quality of group reflection depends largely on the will and capacity of individual participants to engage in group reflection. Reflecting on practice and concepts is challenging even for individuals who are learning the skill for their own practice, such as educators (Hatton & Smith, 1994). Further, reflection for action research endeavours must be conducted in a more rigorous manner than in every day life (Kemmis & McTaggart, 1988). Indeed, reflection that supports learning and improving practice through action research requires focus on content, process and underlying assumptions, which can create anxiety and discomfort in participants (Allen, 2001). While CGK leaders certainly have experience engaging in reflection through their leadership capacities, their participation in the reflection cycles for this research would have been primarily through an official capacity, which could present considerable barriers to engaging in deep and critical reflection. I decided, therefore, that the most appropriate participants in the reflection group would be peripheral leaders actively engaged in Comarca development, but who do not hold official positions within the CGK.

With these initial criteria for finding a reflection group, I began inquiring into appropriate fora. At the time, a group of Kuna leaders were organising into a newly formed NGO. Some of its members were leaders whom I had collaborated with in the past, while others were emerging leaders. The NGO is called Nosotros Estamos

Generando Alternativas (we are generating alternatives) the acronym of which is NEGA which in *dulegaya* means house, home and universe, denoting solidarity, community and identity. NEGA membership includes Kuna academics (social and natural scientists) and experts in the theoretical, methodological and practical aspects of intercultural dialogue, participation of indigenous peoples and sustainable development. The objectives as outlined in the mission statement are to:

1. Conduct social research with a focus on intercultural dialogue using cutting edge methodologies;

2. To build capacity in communities for tolerance and peace within an intercultural and gender equality agenda;

3. To promote self-determined community development initiatives by supporting project planning, implementation, monitoring and evaluation.

The focus on both action and research made it a particularly suitable group for sharing and building collaborative knowledge. Initial discussions began with NEGA during several meetings with the executive board. The reflection group contributed throughout the research process in numerous informal discussions with individual members or small groups of members, and through participating in three formal group workshops in Panama City. Two were conducted during the field work period and the third was conducted in April 2010 and focused on validation of my research findings.

5.2.2 Tools for facilitating knowledge sharing and conceptual development

As Herr and Anderson (2005) note, the relationship of an action researcher to the group with which he or she is collaborating influences the method and approach taken to guiding iterations of cycles of action and reflection. In some cases, the researcher is an outsider that approaches a group with a research interest (e.g. McIntyre, 1997). A PAR group with which reflection is facilitated can therefore either be one's own work group, a group formed specifically for the research purpose, or a group with a similar interest. In this study, NEGA became the reflection group, which I approached with a specific research interest. While I did not have a mandate to interact with the group for a specific purpose, such as conducting project evaluation, or as a consultant brought in to help with strategic planning or problem solving, the group was not formed just for the purpose of my research. I was participating in an ongoing process of reflection which NEGA was already engaged in, but for the purpose of this study,

several special events were held, during which reflection was focused on the areas of interest to the study.

As noted already in Chapter 4, the reflection group provided the means through which conceptual clarity of the complex problems of adaptive capacity and endogenous development processes were analysed and understood. I use the term 'building conceptual clarity' rather than theory building, because this more accurately describes the outcome of action research projects. Theoretical development was not the main focus, but, because the research was part of a PhD process, I used tools from systems approaches that helped make explicit the process of building conceptual clarity. As the complex research area was discussed and reflected upon collectively, several themes emerged as important to building coherence for a holistic understanding. These themes were further inquired into through use of in-depth qualitative methods such as participant observation and conducting interviews with key informants. Further, ongoing development initiatives in Kuna Yala were used as vehicles for reflecting on development processes.

Systems approaches to problem analysis use a number of different tools for building visual models for sharing knowledge and making decisions. Checkland's (1984) soft systems methodology (SSM), for example, is used for working with systems that are representations of the way people view a problem (Barton et al., 2004; Flood, 2000) (see Section 4.2.1 for further details). In SSM different views of 'human activity systems' are explored through different 'root definitions'. Once a particular definition is decided upon collectively, conceptual models of the system as defined are produced, and a process of comparison between the defined system and the model of the system promote improved actions. The tools that SSM uses to bring to the surface multiple views of a complex problem are root definitions, and conceptual models. The relationship between the defined problem and the model of the system is, however, not altogether straightforward (Checkland & Tsouvalis, 1997), illustrating that even well developed methods, such as SSM require flexibility in its application. As Checkland (2000) himself argues, over two decades of use, SSM has moved from a step by step logic based approach to a more flexible and process focused approach. I did not use specific tools of SSM such as root definitions or system models, however, the process of leveraging different view points of the complex situation being discussed, and then thinking about how those compare to the system one is engaged in was used implicitly in the process.

Other tools that support a systems approach to sharing and constructing knowledge in groups include concept maps, mind maps and cognitive maps, among others. These qualitative visualising tools can be used in a complementary manner to improve knowledge sharing and construction (Eppler, 2006). Proponents of different methods illustrate differences between them. Eden (2004) develops cognitive mapping as a formal modelling technique that is useful for structuring complex issues (Eden & Ackermann, 1998), and Buzan (2006) develops mind mapping as a tool to help individuals and groups think through complex problems and decisions. Both of these tools are useful for graphically showing relationships between concepts, ideas and thoughts.

An example where mapping techniques were combined with action research is that of McKay and Marshall's (2005) use of cognitive mapping to help problem analysis. Reflecting on the efficacy of their use of cognitive mapping, they argue that it was helpful for: clarifying thoughts of participants; stimulating new thoughts; involving stakeholders; facilitating emergence of further issues; and exploring shared understanding. Similarly, Stringer (2007, p. 112) suggests that concept mapping can help visualisation of complex problems with a group participating in action research. All of these attributes of visual mapping techniques supported my goal of building conceptual clarity through a collaborative reflection process on a complex problem. In the rest of this chapter, I provide a description of the process used, highlighting how key emergent themes developed through building and sharing our conceptualisation of how adaptive capacity and endogenous development are supported. I provide three examples of visual representations of conceptual understand that were developed using Inspiration mind-mapping software.

5.3 First Reflection Cycle

5.3.1 A point of departure

To initiate the process of conceptual development regarding the central research questions of cultural and social processes that support adaptive capacity, I developed a conceptual diagram during the initial stages of the field work. This was as a starting point for talking about the complex processes under investigation. I developed the diagram from my initial literature review on adaptive capacity and CASs, work of previous scholars on Kuna collective processes and adaptation and my own

experiences of working with the Kuna. This diagram is shown in Figure 6. Six main characteristics are shown to influence the ability of the Kuna collective system to adapt. At this stage, the Kuna system is loosely defined as Kuna Yala, and although the different levels of collectivity are implicit within the overall system, they are not explicitly shown. The six characteristics shown to be important in influencing adaptive capacity are:

1. Connection to the natural systems – basic characteristic of the Kuna IBCS, that of a linked social-ecological system. Without connection between communities and collective levels to the natural systems, the potential for adaptation and co-evolution is minimal;

2. Connected to outside – in conceptualising Kuna Yala as an open system that is interacting with systems beyond its borders, it is thought that information is flowing both ways, in and out. This requires epistemological bridge building;

3. Use of collective memory – memory of past experiences is information that is required as input for new decisions. Co-evolution occurs slowly over extended periods of time and requires that as much information of past events is remembered for improved adaptive potential. Information and interpretation of historical process of dealing with natural and social change are important;

4. Fosters creativity – in the face of surprise and uncertainty new creative solutions are required. A process for fostering creativity is necessary;

5. Collective identity – for self determined development, a shared identity provides focus and guidance in the process of making adaptive choices. This is particularly important in the post-colonial setting of today, where indigenous identity is challenged by multiple cultural systems interacting;

6. Collective decision making processes – adaptation of communities and Kuna Yala is facilitated through governance processes in which decisions are made for collective well-being. The IBCS is made up of 49 communities, in each, collective processes are critical for ensuring access to and facilitating the bringing together of all the necessary information for making the best possible adaptive decision.

Figure 6 Characteristics influencing Kuna adaptive capacity
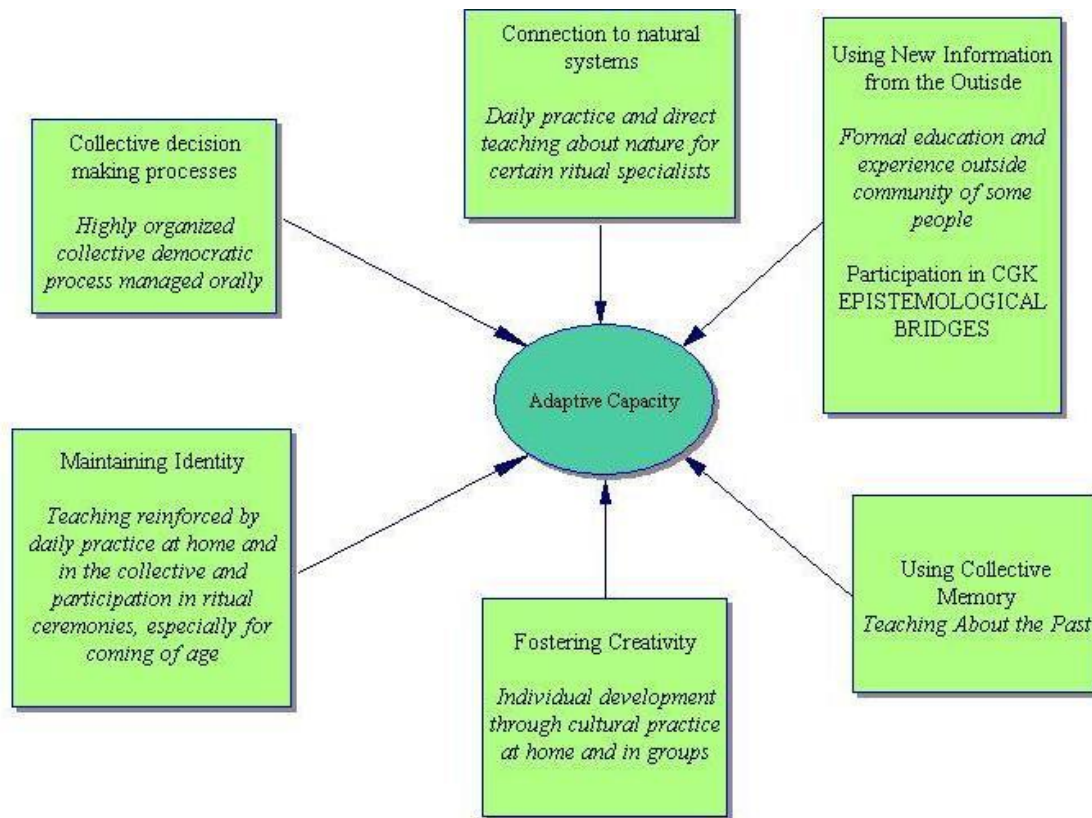
As a starting point for a facilitated dialogue, six characteristics of the Kuna system were thought to be important for adaptive capacity and are shown in the green boxes; fostering creativity, using collective memory, maintaining identity, collective decision making, connection to the natural systems and using new information. For each characteristic ideas regarding how this characteristic is built are included in the boxes.

5.3.2 First workshop with the reflection group

Figure 6 was used as a starting point for a facilitated dialogue during the first workshop held with the reflection group (Appendix E contains details of the workshop). Participants were asked to be critical as they engaged with the concepts and relationships illustrated in the diagram. The following points emerged as important through the discussion.

Leveraging different views of the IBCS

The discussion began with a general conversation regarding adaptive capacity and how it can be understood in an IBCS. It was obvious that there was no common definition of the Kuna IBCS. While all participants are Kuna leaders, they are also professionals who were engaging in the dialogue through using concepts from their own disciplines. Disciplines represented were biology, ecology, law, sociology and anthropology. Leaders from different disciplines were using different criteria to define the 'system'; for the biologist it was a system with natural ecosystem boundaries, the sociologist defined it by the socio-political structures of communities. These different definitions of the system were discussed (these are akin to 'root definitions' in SSM), and the process of negotiating between them continued through the entire reflection group process.

A further aspect that required discussion of different views and a decision that would allow dialogue was at what level of the IBCS we were conceptualising. It was agreed to focus, to begin with, on a community scale, which seemed a more manageable scale for the discussions. A further difference between participants emerged as each individual in the group was speaking from the experience and particular reality of their own community in Kuna Yala. As was discussed earlier, the autonomous nature of each community in Kuna Yala creates a diversity of local contexts, while still being able to talk about a 'generic' Kuna community system. This was helpful at the initial stage, as it highlighted the need to always interpret what was emerging conceptually within that local context.

Related to different views of the IBCS was disagreement on how to evaluate the system's current state. A lawyer from Ukupseni evaluated the community systems of Kuna Yala as being in a state of decline, based on low agricultural yields and increasing dependence on Colombian merchant ships and development projects. At the other extreme, a sociologist from Akuanusadup considered the Kuna socio-cultural system to still be thriving, and used the example of the continued practice of the *sailagan* chanting, and the continued practice of traditional agricultural production. Different perspectives led to the emergent realisation that while some areas or aspects of the 'system' are in decline others may be thriving. The differences in interpretation within this small, seemingly homogeneous group of Kuna leaders illustrate the importance of dialogue and epistemological bridge building for collective processes when analysing complex situations.

Adaptive capacity and protection

The focus of the study is to understand factors that support Kuna adaptation. Yet in talking about adaptive capacity, a paradox became evident. Some of the historical successes of the Kuna, such as the 1925 revolution, which allowed re-organisation of the Comarca, were concerned with protection of the system, and resisting change, rather than nurturing it. When discussing the characteristics that support endogenous development, some argued that protecting system integrity is as important as fostering change. This is coherent with the paradoxical nature of dynamics of CASs. Protecting the system is particularly relevant to today's interconnected nature of communities and the Comarca. An example of how this is done is by 'filtering' information that enters the system. The communities are actively deciding what information is useful and can be adapted to support local goals, and what information or knowledge needs to be 'managed' in order not to lead to negative impacts. These reflections were useful because they clarified the necessity to analyse epistemological bridge building not only as creating new innovative solutions, but also for protecting the integrity of the system. This discussion led to further analysis of the role of networking leaders, as mediators of relationships.

The role of collective memory

In discussing the role of collective memory, it became clear that memory is not just used as a passive storage space for information on past experience, but is a system of interpreting and reinterpreting changes. This, in part, is accomplished by the skill of the *argar* in interpreting the chanting of the stories of *Bab Igar* by the *saila*. One participant gave an example of an experience. He was trying to explain climate change to a group of spiritual leaders and was finding it difficult to explain what he understood as scientific language in *dulegaya*. An *argar* stepped in to help him and used metaphor to clearly explain current climate change through the story of Piler. The skill of the leaders combined with the knowledge of historical experience that is passed down orally make collective memory useful for adaptation. In discussing how this is occurring today in Kuna Yala, it became clear that there is consensus on a challenge being faced by leaders in passing on collective memory to younger generations.

Collective capacities and social cohesion

In discussing collective decision making processes, most of the participants could speak from their own personal experience in decision making as supporting leaders of the CGK and in their own communities. The general view was that the strongest aspect of adaptive capacity that both communities and the larger Kuna collective continue to rely on for the day to day management of processes is social cohesion for collective action. This aspect of Kuna collectivity is still considered to be vibrant. This led to rethinking the importance of decision making processes into a broader characteristic that includes social relations as pivotal in decision making processes.

Collective decision making was related back to the initial discussion of the evaluation of the state of the contemporary Kuna system. The participants seemed more comfortable talking about the relative success of the system compared to other indigenous peoples and could use recent examples such as an emergency congress to discuss the future of tourism planning in the area. A major factor that was repeatedly mentioned is the Kuna territorial autonomy and continued use of collective structures for its administration and governance, which were secured through historical and ongoing processes. These underlying conditions of the Comarca are often left out of the analysis by the Kuna today because they are taken for granted but, as one participant added, the struggles that led to those conditions are remembered collectively both through collective memory and through celebrations such as the Kuna revolution commemorations.

Identity is a source of weakening

Collective identity was discussed by individuals in the group, each bringing their own personal experiences of interacting with the Comarca. One participant grew up in Panama City and has not spent extended periods of time in her community, and as such used different language and examples when speaking of her identity. The overall emerging theme from this discussion was that some of the weaknesses seen in the capacity of the system to adapt, such as an increasing dependency in some communities on outside food sources was in part attributable to a change in identity. Progressive influence of Western education on the youth was one key factor behind the weakening of Kuna identity. This discussion points to the process of construction of collective identity as an important thread that led to further in-depth analysis.

Discussion on spirituality

The discussion on spirituality was an important part of this first workshop, as it was considered a key integrating feature by participants. My limited knowledge of Kuna spirituality meant that this discussion was focused more on trying to answer questions about Kuna spirituality; how is Kuna spirituality different from other spiritual traditions? How is it understood by individuals? How is it felt? What is its role in the adaptive process?

All participants during this conversation asserted that they were not experts in Kuna spirituality so could only offer their own lay interpretation. Several themes emerged. First, the initial hypothesis that spirituality is a part of the whole system was confirmed. It was conceptualised as part of the interactions between people and the cosmos, the processes and relationships described as part of the Kuna world. The notion of *burba* has often been translated as spirit, but during this exchange it became clear that *burba* is a notion that allows for connectivity of all things. One person interpreted *burba* as a metaphor for the value of things and, because for the Kuna everything has *burba,* it means that everything is valuable and everything is connected. This interpretation led to more in-depth analysis of spirituality.

Another insight that came from this discussion is that spirituality, to the participants, is not an abstract thought (and these particular people are comfortable with abstract conceptual ideas) but rather it is related to the way someone feels and conducts themselves at certain times. Feelings of joy and motivation are thought to come from spirituality; it is a source of such emotions and provides meaning and motivation in life.

5.3.3 Weaving reflection into conceptual development

The emergent themes from the first workshop combined with ongoing inquiry conducted in Ukupseni and Colebir. Figure 7 illustrates a second moment of conceptual development which signals the last step in the first cycle of reflection. It focuses on the bounded physical and socio-political community of Ukupseni. Six key factors (shown in green boxes) and a second layer of analysis include aspects that contribute to them (shown in yellow boxes). Connections between the different parts of the system those factors contribute to have become more obvious, making the

overall sense of the diagram more complex. The reflections that led to developing this map are discussed further:

- Relationship with nature remains as one of the necessary conditions for adaptive capacity of the community. A relationship that enables the flow of information between the socio-cultural and bio-physical systems is important for sustainability. While it is true that *Bab Igar* provides for a framing of this relationship in terms of reciprocity, this does not mean that the Kuna do not exploit the natural systems leading to degradation. None the less, the connection continues to be important.

- Collective memory – added to the original hypothesis of collective memory being important is an awareness of a process of accessing, maintaining and interpreting collective memory. Among others, two practices are viewed as important in the capacity to use collective memory; observation of natural cycles, which is related to the practice of individuals within nature, and remembering the history that makes up the collective memory in order to use it when necessary. While this collective memory may not always be 'accurate' in historical terms, the *Bab Igar* and its use enables a long-term view of change and process.

- Access to information from the outside – in order to have access to outside sources of information, linking between the community and regional processes becomes important. Today, communities also directly link with the national system and beyond. Linking is facilitated by individuals who are participating in external networks, can understand foreign epistemologies and views and can successfully negotiate the relationship.

- Evaluating information from the outside - as was pointed out during the workshop, the community continues to manage how external information or knowledge is used. The evaluation process requires the same connected linked individuals that are negotiating the relationship with the outside world to be tied into collective processes.

Figure 7 Main factors affecting Ukpseni's adaptive capacity
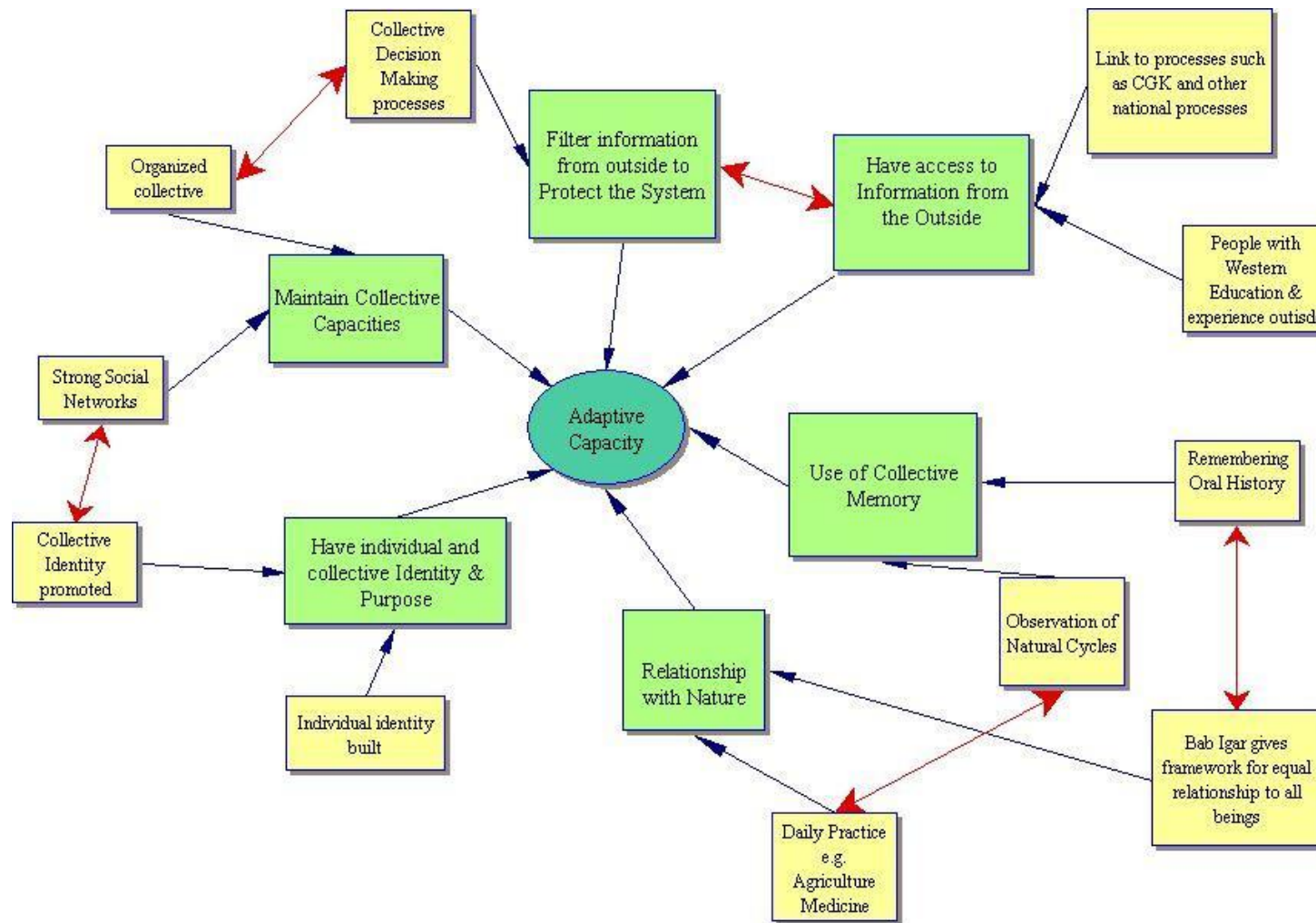
The six key factors that affect Uukpseni's adaptive capacity are shown in the green boxes. Aspects that contribute to them are shown in yellow boxes with dark blue arrows indicating relationship. Double headed red arrows indicate relationships between key factors and related aspects.

- Maintaining collective capacities – decision making processes are part of the collective capacity of Ukupseni, but they are only possible if the community is organized and there is social cohesion through networks between people that will bring them together for decision making and collective action that emerges from it.

- Individual and collective identity and purpose – in part, the strong social cohesion of Ukupseni is due to the social networks that facilitate collective processes. Individuals make up the collective and as such they must act towards the well-being of the collective. This is possible because identity of individuals is constructed as part of the collective. Several practices are working to promote collective and individual identity in Ukupseni.

At this stage the role of leadership was being fine tuned; specific skills and knowledge of leaders are important for supporting all six factors. An indicator of the importance of leadership is the leadership development initiative promoted by the CGCK, as a response to a felt need for re-invigorating the traditional processes of leadership development.

5.4 Second Reflection Cycle

The second iteration of reflection did not include a formal workshop, due to programming difficulties. It relied on numerous reflection opportunities with individuals of the reflection group or several individuals throughout the field work process.

5.4.1 Building conceptual clarity

While it is impossible to fully recapture the conceptual development that was occurring during this phase, I discuss several points that are important indicators of how learning was occurring. These reflections fed into development of the next iteration of a conceptual model, which is illustrated in Figure 8.

Re-negotiating the system

Negotiating a definition of the IBCS as the system being investigated continued throughout this phase. Even when defining the system as a bounded physical and socio-political space such as a Kuna community, tensions remained between being

specific enough about a particular community, for example Ukupseni (as was done in the last section), and the ability to speak in broader terms of a Kuna collective. This re-negotiation of the system under investigation depended on what was being discussed and with whom. The multi-scale approach taken, required that at different moments different levels of the system be analysed. During field work, it was difficult to discuss in abstract terms the collective with people, as they are interacting at any time with what they interpret as concrete collectives – in their community, or with the CGK, for example. Defining the system too rigidly risked losing the ability to make connections between the parts of the IBCS and would limit understanding of adaptation as an ongoing, dynamic process of change.

Therefore, at this stage I decided that it is important to be able to describe a generic Kuna system that could provide insight about any particular Kuna system by adapting it to the concrete context. From the analysis and insights gained at this stage it seemed that in most cases the main factors being discussed as important to adaptive capacity (connection to nature, collective capacities, use of collective memory, etc.) can be used to talk about different levels or subsystems of the IBCS, fitting well with the CASs framework used. This led to the next moment of conceptual development, shown in Figure 8 that came to focus on Kuna collective adaptive capacity at both the community and the Comarca levels.

Link between natural and social system

The IBCS approach theorises that socio-cultural aspects are linked to environmental aspects. What was clarified through the process is that there are deliberate actions taken in Kuna collectives that actively maintain the interaction with the ecosystem. This confirms that it is an appropriate setting for research into the processes of co-evolution. Moreover, the interaction is necessary beyond the need for subsistence and dependence, as it is a fundamental part of spirituality. The forces at play in the interaction between people and ecosystems are theoretical and practical, and the experience of individuals is the vehicle for combining them. *Bab Igar* provides theoretical context for the relationship but without practice the meaning does not become an experiential reality for maintaining and nurturing the equal relationship as a part of a larger whole.

Implicit processes

Managing information from the outside is important for a relationship with outside epistemologies. However, it is not a process that has a formal, recognised structure in community management, but rather it is accomplished implicitly through overall collective practice. On several occasions in Ukupseni, filtering information so as to focus and adapt it to be useful for the system was accomplished through routine informative meetings of projects brought by NGOs to the community. The meetings were set up for the NGO to report to the community their actions, and although they accomplish this objective, by being held during collective meetings they are always open to discussions by leaders and participants in *onmaked nega*, who act as gate keepers, and can filter unwanted or unnecessary information out of the exchange. Filtering information therefore is an implicit part of collective processes, but one which is important for adaptive capacity.

Directed collective action

One of the most obvious features of the Kuna collective (whether a community or the entire Comarca) is an ability to get things done in a relatively organized, efficient, and effective manner. This is what is termed 'collective capacities' in the diagram. The ability is an advantage that can propel collective action when necessary. But regular time spent in meetings in *onmaked nega* in communities and the CGK meetings point towards the collective action not just being reactive, but also being proactive, looking towards the future and creating new opportunities for people and the collective. This leads to the insight that the collective capacities of the Kuna are able to propel development and co-evolution by being both reactive and dealing with problems but also being proactive and shaping the future.

Identity and social cohesion

In Figure 7 individuals having collective identity and purpose is shown as a major factor contributing to overall adaptive capacity in Ukupseni. Through this phase of reflection, identity was conceptualised as an implicit part of how people act and interact, both on their own and within groups and the collective. It seems that identity is not easily defined or separated from the collective behaviour and as such it cannot

be viewed as a factor on its own, but rather is embedded in the social cohesion that is so noticeable and important for the Kuna collective.

Enabling conditions for adaptation to emerge

The theoretical understanding of adaptation as an emergent property of collectives is empirically supported here. Examples of specific moments of an adaptive response can be talked about in hindsight (the formation of the CGCK, changes in community policies) but while they are occurring the actors are not thinking about it as an adaptive response, but rather about the decision that needs to be made at the time based on the situation. Figure 6 outlined characteristics, and Figure 7 spoke of main factors; the difficulty in defining them is related to the emergent nature of the process being studied. At this stage it seemed more accurate and perhaps even more useful to think of them as enabling conditions. They are not prescriptive, but rather they increase the chances of the system being adaptive. Visualising these features as conditions, however, creates new challenges, because they often cannot be accurately defined or measured. This provoked further conceptual development and futher iteration.

5.4.2 A map of collective understanding

The reflections presented in the previous section led to further building of a collective map of the key concepts and relationships between them. A third moment indicative of this stage is illustrated in Figure 8. It describes adaptive capacity at different levels of collectivity. Complex interactions through which adaptive capacity emerges are indicated through causal arrows joining concepts and processes. There are multiple interactions between most of the factors described in the model, and it is now becoming difficult to view in two dimensions. The diagram highlights how the reflection process has led to an increasingly deeper understanding of processes and practices. A description of these is provided through discussing how reflection further built upon conceptual development.

Relationship with ecosystems & use of collective memory

Both a relationship with nature and use of collective memory have been shown to be very important for the process of adaptation in the context of an IBCS. They are

124

shown in Figure 8 to be mutually interacting. Daily practice of people interacting with nature through subsistence activities (agricultural production, hunting or fishing) and specialist activities (medicinal practices, or making dugout canoes) come together with theoretical teachings of the *Bab Igar* regarding equality across all beings. This creates both a physical and an emotional connection in the relationship. Daily practice of interacting with nature influences the ability to observe natural cycles. Observation of natural cycles and remembering Kuna oral history together support the ability to use collective memory for adaptation.

A further level of analysis of these two enabling conditions highlighted practices and processes that underlie them. In order for the collective to interact directly with nature there need to be specialists practicing with nature as well as people working and interacting daily with nature. Furthermore, in order to maintain the context for an equal relationship with nature provided by *Bab Igar* there need to be leaders who are versed in *Bab Igar* and skilled in using it to reinterpret ongoing challenges. For observation of natural cycles there need to be people working for subsistence in nature and they need to share their knowledge with the collective through participating in collective life.

Figure 8 Processes and practices enabling Kuna collective adaptive capacity
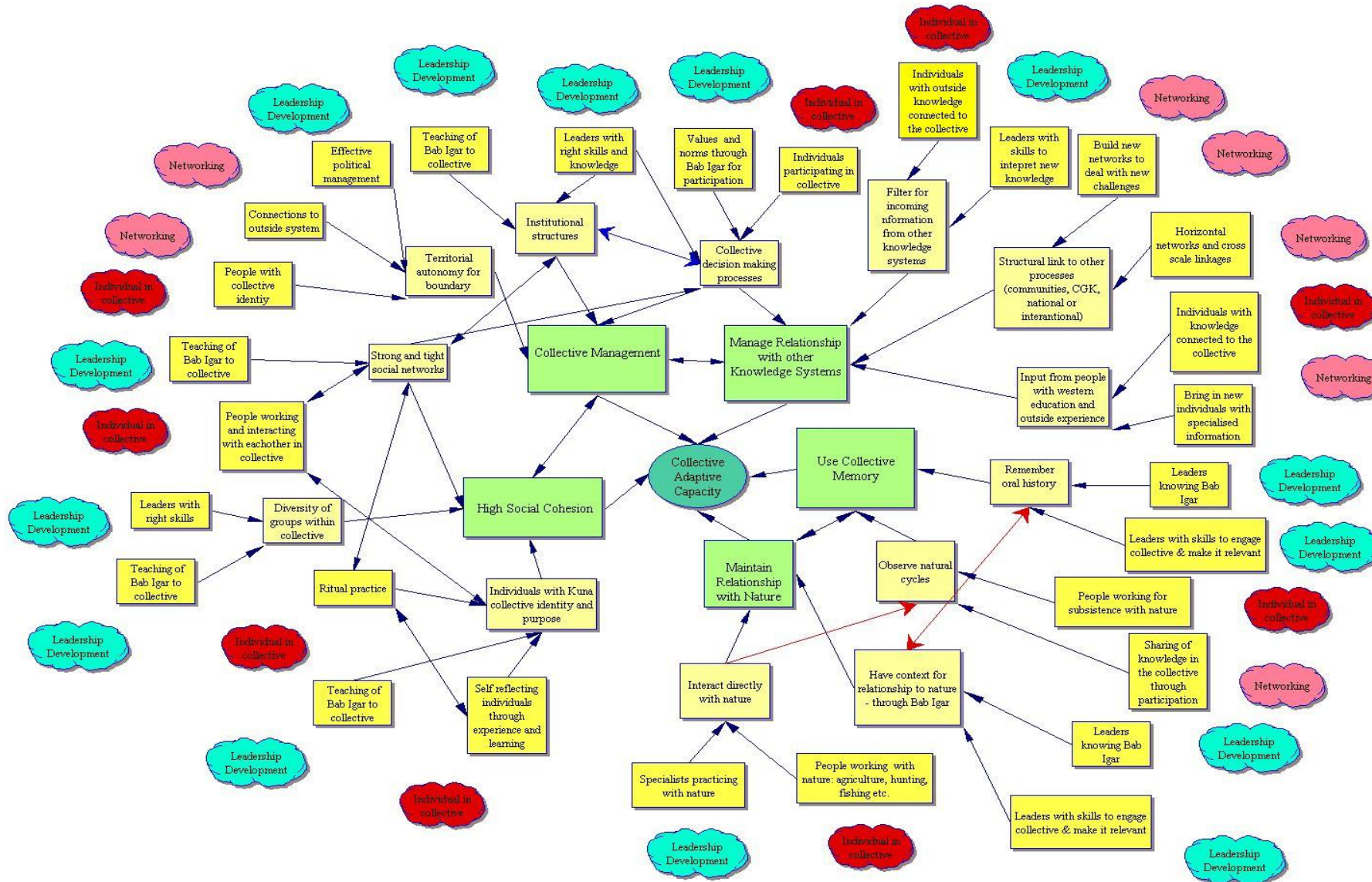
From the centre moving out, the first layer illustrates enabling conditions of adaptive capacity in green Boxes. In the next layer the skills, knowledge, and practices that influence the creation of enabling conditions are shown in light green boxes. On the outside important underlying processes are shown in yellow Boxes.

Managing a relationship with other knowledge systems

The abilities concerned with external knowledge systems were conceptualised as building epistemological bridges or maintaining knowledge dialogues. It is an area of increasing importance due to globalisation enhancing interaction between communities and the Comarca with external and global systems. It is shown in the diagram to be mutually interacting with Collective Management, as it is one of the relationships that must be managed collectively. Four conditions are shown as necessary for the collective ability of managing relationships with other knowledge systems: (i) input from people with Western education and experience outside the system; (ii) structural link to outside processes (these could be from the community to the CGK or from the CGK or community to national and international processes); (iii) filtering process to manage information from the outside; and, (iv) collective decision making processes.

For each of these conditions a number of underlying practices are necessary. In order to have input from people with Western education and outside experience there need to be individuals with the experiences and knowledge that are connected to the collective. Also required is a way of bringing in new individuals and people when specialised knowledge is needed. In order to have structural links to outside processes, there need to be networks. New challenges require new links while already established networks require maintenance. In order to filter the knowledge that enters Kuna Yala there need to be individuals with outside knowledge connected to the collective as well as leaders with skills to interpret the new information in the contemporary context of the collective.

Collective management & social cohesion

Many participants spoke of the organisation of the Kuna collective and its social cohesion as the most recognisable feature of the system, and often the main factor attributed to the historical success of the Kuna collective historically. In the context of adaptive capacity they are viewed as important because their mutually reinforcing relationship provides the glue that holds it all together. Collective management is made possible by: Institutional structures; collective decision making processes; and, territorial autonomy. Social cohesion is maintained through: Social networks; a diversity of overlapping groups within the collective; and, individuals with identity.

There are multiple interactions between collective management and social cohesion, especially between social networks and institutional structures and decision making processes.

For each of the conditions analysis has found a number of practices and processes that underlay them. In order to have collective decision making processes there need to be individuals participating in the processes, leaders with skills and knowledge and collective values and norms that ensure participatory processes. Institutional structures for collective management depend on a diversity of leaders with skills and knowledge. Strong and tight social networks, continued teaching of *Bab Igar*, people working and interacting together in the collective and ritual practices are also important. To develop individuals with Kuna collective identity and purpose, ritual practice, self reflecting individuals and the continued teaching of *Bab Igar* are necessary.

Three general themes of key practices

As Figure 8 indicates, the process of reflection coupled with use of in-depth qualitative methods to further explore certain areas of interest produces a complex picture of adaptive capacity. To further focus the research, another level of analysis illustrated that three main practices contribute to all of the conditions. In Figure 8, next to the yellow boxes showing processes and practices, different coloured clouds represent the general themes of practices that are important for enabling conditions of adaptation. Three groups of practices are identified.

1. **Leadership development** –all of the practices in this group are related to having a diversity of leaders with skills and knowledge for specific roles. Leaders are required for maintenance of all of the five central abilities: Holders of specialised knowledge help maintain a relationship with ecosystems; spiritual leaders with a deep understanding of B*ab Igar* facilitate use of oral history and teaching the collective; and, leaders who interpret collective memory facilitate collective processes. Leadership development therefore emerged as a key process for collective adaptive capacity.

2. **Individuals interacting with the collective** – the practices in this group are concerned with how individuals interact with the collective in their daily lives

as well as in specific moments of working towards an identified collective goal. This does not assume that the individual is only useful as a part of the collective but rather points towards how individual persons can help the collective through different ways of participating. People interacting with ecosystems, for example, through daily work engaging in a relationship with nature on a personal level, while also contributing to a collective relationship with nature.

3. **<u>Networking</u>** – the practices that are part of this group are all concerned with building and maintaining links between people within the collective, between groups in the collective and between different levels of the IBCS. Managing relationships with other knowledge systems is dependent upon networks that are formed between people with certain types of knowledge and the collective, as well as between collectives themselves (for example between communities) or between different scales of collectives (between communities and the CGK). Links between individuals in the collective help social capital development as well as the sharing of knowledge for collective observation of natural cycles. These networks are made both through informal processes – such as trusting bonds between people in a community - as well as through formal processes – creating institutional structures to link into national or international processes.

5.5 Third Reflection Cycle

During the third cycle of reflection, field work into the three general themes of groups of practices identified in Figure 8 continued. The second formal workshop was also conducted with the reflection group (see Appendix F for details). The primary objective of the workshop was to perform a final iteration of group reflection during the field work period to reflect upon what had been learned up to that point. Secondary objectives included reporting back to the group on the ongoing process of the research and discussing potential future actions.

During the workshop, it was evident that a common language had developed between members of the group. All participants were familiar with adaptive capacity as a concept as well as being familiar with each other's views. Figure 8 was used to guide a discussion on how we had reached this common framework for understanding adaptive capacity, highlighting the points of learning and reflections mentioned in this

chapter. This led to a facilitated discussion of the overall learning and the process of learning itself. Several key questions guided the facilitated discussion, including:

- What are the levels of Kuna collectivity and how do they interact with each other?

- Is it best to approach the issue of the system's current adaptive capacity from the perspective of continued processes of adaptation or from weaknesses in the system showing failure or breakdown in certain processes or parts of the system?

- Are current examples of adaptive responses more in line with adaptive management processes or longer term processes?

The workshop enabled a discussion of the overall approach taken to understanding adaptive capacity at different levels of Kuna collectivity with the shared goal of improving it. The following are the main points that emerged.

Long term and short term focus

The debate on how best to evaluate the current capacity of an IBCS to adapt continued, with some arguing that the best approach is to work with processes that are still strong as these are likely to be important in maintaining the capacity. Others argued that the signs of weakness in the system are where more attention needs to be focused as they are the potential 'hot spots' for decay in adaptive capacity that illustrate potential 'leverage points'. Both of these approaches seem relevant and largely depend upon whether the main concern is short term or long term goals.

The CGCK is mainly focused on long term goals through promoting processes that strengthen cultural practice and enhance endogenous development and self-determination. The CGK also has long term development goals, but the reality of having the responsibility of solving immediate and urgent problems compromises its long term focus. Participants felt that the CGK is often working in crisis mode, attending to urgent matters of governance such as the recent attempt of the Panamanian Government to fast track a new law that would change the political administration of all indigenous territories. This requires much focused attention on the problems and weaknesses of the system. As Gilberto Arias, *saila dummad* of the CGK reminded the public in his opening message at the urgent CGK assembly to deal with land encroachment in Santa Isabel, the Kuna are still fighting to maintain their

territorial autonomy. They cannot fall asleep, for if they do it will be swept from under them. This context of ongoing struggles for rights and protection of autonomy is common in CGK processes, while interactions with CGCK processes tend to be more optimistic about working towards long term goals. Both approaches are necessary, and both are significant for adaptive capacity and endogenous development.

Context of Kuna Yala

Although the importance of looking outward and ensuring protection was recognised by all, reflection illustrated that Kuna adaptive capacity is understood through the unusual (for indigenous peoples) context of a self-governing territory. Participants with experience in international indigenous rights movements and the situation of other indigenous peoples agree that Kuna Yala provides a relatively safe space within which social and cultural processes continue to develop organically. The events that led to the 1925 revolution in Kuna Yala illustrated the threats of colonising forces, but since the formation of the Comarca, communities have continued development within a relatively protected environment. The defence mechanism that is still necessary is provided by the regional processes, protecting communities from direct contact with threats and allowing their development from within. Thus processes occurring in communities can be thought of as safe from major and direct threats. Globalisation, however, has brought new threats, while not as direct, certainly as severe as colonisation. The networks linking levels of the system, and the IBCS to the outside world are mechanisms that are pivotal in the current globalised era.

Levels of Adaptation

When the scope of this research was initially developed (outlined in chapter 2), recognition of different levels of adaptation - adjusting to changes and creating new arrangements - illustrated a need to be sensitive to different types and levels of adaptation. When discussing adaptation and adaptive capacity during the reflection cycles and in developing the conceptual model with insights gained from ethnographic inquiry, levels of adaptation were not always easily discernible.

Deciphering different levels of adaptation in terms of both long term and short term goals and different types of challenges was influenced by the interpreting

framework of participants. City dwelling, professional Kuna were more comfortable discussing adaptive changes in terms of policy and management processes. The majority of conversations with the reflection group revolved around adaptive responses that relied on conscious learning. These examples are consistent with what the literature calls adaptive management, and include:

- Historical and ongoing processes of formal education in Kuna Yala. There have been schools in some communities in Kuna Yala since 1915 (Howe, 1998). The decision to allow schooling arose in different communities at different times and through different processes. Leaders influenced these decisions, such as Nele Kantule and Colman's view that education would provide the Kuna with information and skills to help them negotiate with other cultures while maintaining their cultural values and autonomy. Accepting education can thus be viewed as a response to the realisation that the outside world was encroaching on Kuna Yala. Today, the Intercultural Bilingual Education Project has taken up this vision again, but this time is using different methods and approaches, as the system it is working within has changed. This can be viewed as yet another adaptive response to deal with an ongoing challenge.
- Natural resource management projects initiated by communities, the CGK and NGOs are examples of responses to negative feedback of the natural systems.

Ritual specialists, on the other hand, spoke of deeper level changes, recognising multiple dimensions of life and change. Notwithstanding this difference, across all participants there was intuitive agreement of a deeper level of transformative change as part of Kuna practice. A common example of processes that foster collective transformation at a deep level in order to deal with crisis was *war uet* ritual.

Levels of Collectivity

A recurring discussion with the reflection group, on all the insights gained in the field, has been the levels of collective spaces, conceptually interpreted through the CASs framework. The recurring conversation is illustrated through the shifting of the focus of the conceptual model from the community to the region and back to a generic collective Kuna space. In the second workshop, a consensus of three levels of Kuna collective life was reached, based on experience of participants through their own

lives as members of the collective, the family, the community and the region. These levels guided in-depth analysis.

Each level comprises a subsystem of the IBCS, and is embedded in the subsystems of larger scales. Figure 9 depicts the three interacting levels. The red arrows illustrate the links between the subsystem levels and the blue arrows illustrate links across more than one scale.

Figure 9 Interacting levels of collectivity within Kuna Yala

Regional

Community

Cross scale Linkages

Family

Expanding Scale
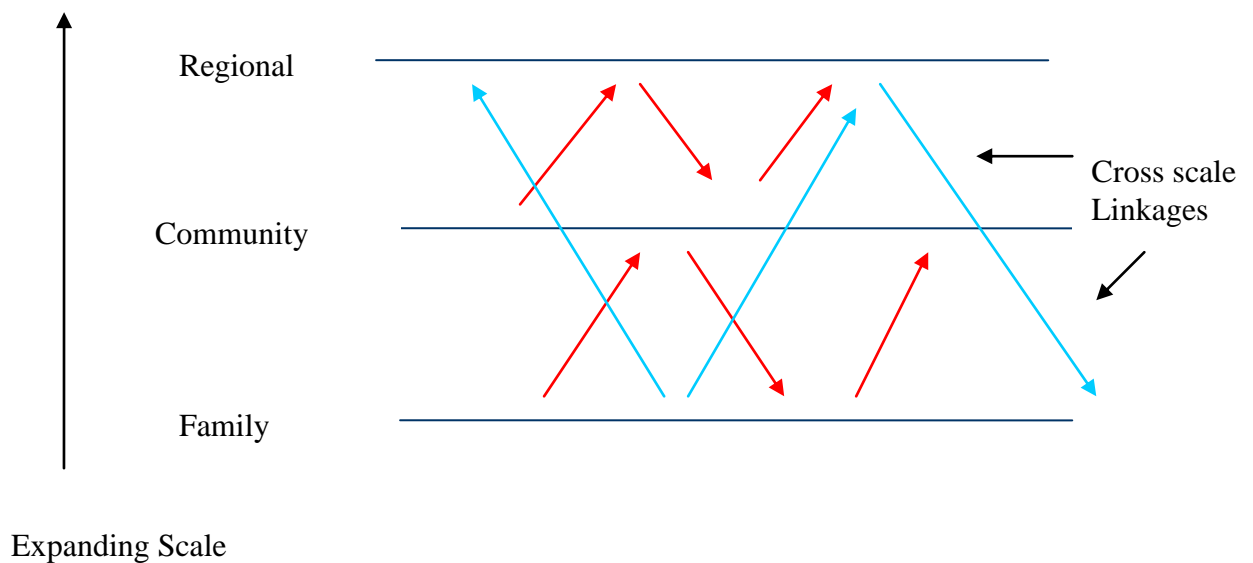
As the embedded nature of the CAS that makes up Kuna Yala begins to become clearer, so does the importance of networking between the subsystems levels. Most of the members of the reflection group have at some time or currently are in positions that require them to manage links, and so offered personal insight into the different types of links and how they function. Networking practices in Figure 9 are functioning within levels but also between levels. There is a perceived increasing need for different and better linking across scales, especially towards the outer layers of the system. The links between communities and the CGK are thought to be weakening, as the language of the communities is not able to keep up with the language of the CGK. Another factor influencing the weakening of these ties is the continual flow of people and their capacity out of the communities to the city, creating a gap to be filled by those returning to the community with the outside knowledge and language. This aspect of the system is thought to be an area that the

conceptual map should highlight, illustrating the weakness of a two dimensional model for understanding a complex system.

5.6 Conclusions

This chapter aimed to make the reflection process, the central organising feature of the methodology used in the study, a transparent process. Furthermore, an explanation of the process illustrated how conceptual clarity was built through facilitated collective reflection. Three moments of conceptual development into Kuna adaptive capacity are shown through Figures 6 - 8. The final reflection that occurred during the field work period enabled a common understanding of adaptation as an emergent property of collective management.

Three general themes emerged as groups of processes and practices were identified as key to maintaining the dance of complexity that provides enabling conditions for adaptation. These three groups: leadership development, individual collective practice and networking, were simultaneously analysed throughout the field work period. I used directed in-depth inquiry through participant observation and interviews to gain greater understanding of how these practices support adaptive capacity and endogenous development. The following three chapters (Chapters 6 – 8) present the findings from inquiry into each. In each of these chapters I first develop an appropriate framework for analysis of the role of these practices in supporting adaptive capacity, to illustrate the focus I used during inquiry. While each key area is discussed separately, the practices are mutually interacting, and the chapters are complementary. Holistic interpretations are presented in Chapter 9.

My interest in this study was born long before I was enrolled in a PhD program, and as I discussed in developing my methodology in Chapter 4, I chose to use action research in order to engage the Kuna in the research process. The reflection group has provided the main collaborative vehicle for the research. Beyond the field work process I have held one final workshop with the reflection group during my last visit to Panama in April 2010. The details of this workshop are discussed in Chapter 10, to show how the research findings indicate key leverage points in the system in order to support improved practice. The intention is that the action part of this action research project will continue beyond the life of this thesis and my PhD process, to feed into ongoing Kuna endogenous development.

Chapter 6

Adaptive Leadership of Self-Organisation

Complexity science allows us to develop leadership perspectives that extend beyond bureaucratic assumptions to add a view of leadership as a complex interactive dynamic through which adaptive outcomes emerge. (Uhl-Bien, Marion, & McKelvey, 2007, p. 314)

6.1 Introduction

This chapter discusses the role of leaders and leadership development in Kuna adaptive capacity. Kuna leadership roles and capacity have already been analysed by authors focusing on facilitation of collective life through ritual and political processes (Chapin, 1983; Howe, 1974, 1986), and their role as mediators of change within the Kuna system and in relation to external processes (Holloman, 1969; Martinez Mauri, 2007). The CAS framework used here provides a new lens for interpreting the role that Kuna leaders play, through focusing on skills and abilities that support adaptation and self-organisation. Leadership emerged as important for adaptive capacity through the reflection group process (see Figure 8), indicating that Kuna leaders support adaptive capacity through a multitude of different practices associated with a diversity of leadership roles and skills, these roles and skills are the focus of this chapter.

I first provide a brief review of how leadership has been theorised in light of complex systems and adaptation. For this, I review literature on leadership within the organisational learning field, where a complexity approach to collective management proves insightful. However, a discussion of Kuna leadership and adaptive capacity cannot be undertaken independently of the context within which leaders act. As thorough descriptions of Kuna leadership roles already exist, my intention in the next section is to familiarise the reader with the Kuna *onmaked* governance system, the vehicle through which collective life is managed and adaptation is facilitated. The *onmaked* system is the stage on which leaders act out their roles. A meshing of leadership roles has occurred through self-organisation and evolution providing a complex contemporary governance system. Analysis of leadership in this context illustrates the continual challenges faced in facilitating learning and adaptation.

The chapter then turns to analysis of Kuna leadership development, focusing on the process of leadership development and the skills developed. The skills necessary for

adaptive capacity developed through Kuna practices are then discussed, leading into a discussion of the challenges that contemporary leadership faces in facilitating governance in an ever more interconnected world.

Finally, the implications for adaptive leadership are discussed. Kuna responses to the stresses that leadership development is facing provides a useful example of Kuna adaptive capacity in action, enabling new and creative avenues for supporting continued self-organisation.

6.2 Leading Adaptive Collectives

The CASs analytical framework used for analysing Kuna Yala as an IBCS enables adaptive and self-organising behaviours of collectives to be understood. As diZerega's (2000) model of societal governance illustrates, both instrumental organisations with specific goals, and self-organising social systems, through which new forms emerge, co-exist. The challenge that a complexity approach brings to endogenous development is to enable a view of both instrumental and self-organising social systems, to understand how their contradictions become creative spaces for influencing system dynamics. Leaders play a central role in this delicate act of balancing at the 'edge of chaos'.

The tendency in leadership theory has largely been towards models that fit within 'command and control' approaches which only view instrumental aspects of social organisations. Organisational learning theories provide opportunity for also viewing self-organising behaviours within organisations. The focus therefore shifts from production and goal oriented management to fostering adaptation and learning. While the motivation for thinking about adaptive and learning behaviours of organisations are recent developments such as rapid technological changes creating higher uncertainty and complexity in the business environment (Barkema, Baum, & Mannix, 2002; Bettis & Hitt, 1995; Child & McGarth, 2001; Dodgson, 1993), the assumptions of working within an environment of complexity uncertainty and change, provide common ground for understanding the role of leadership in adaptation.

Organisational learning is concerned with building successful organisations (ones that remain competitive and innovative) in uncertain and complex environments (Fiol & Lyles, 1985). This requires adaptive capacity. As learning is a key aspect of adapting to change, organisations that learn are thought to be adaptive, and new management models focus on building 'learning organisations' (Senge, 2006) or

'sense-and-respond' organisations (Haeckel, 1999). In spite of the recent interest in organisational learning, the role of leadership in this new management paradigm is under theorised (Uhl-Bien et al., 2007; Waldman, Berson, & Keller, 2009). One possible reason is disagreement between the disciplines that engage in theory and practice of organisational learning (economics, management, innovation, organisational theory, organisational change theory and organisational psychology) (Dodgson, 1993; Fiol & Lyles, 1985). There is overall agreement, however, that organisational learning is more than the sum of individual learning. This fits with a whole system view of social organisations and highlights their ability for self-organisation.

The main challenge for theoretical development in the field has been making the link between individual and organisational learning. It has led to a focus on theories of learning levels within individuals and groups (Argyris & Schon, 1978; Bierly, Kessler, & Christensen, 2000). The tension between individual and organisational learning, however, continues to exist, and most organisational learning theories are mainly based on theories of individual learning (Romme & Dillen, 1997). Leadership research within these models has stayed close to the dominant paradigm in the leadership literature of focusing on how leaders influence others through dyadic relationships (Drath et al., 2008), albeit with a focus in learning capacities (Bierly et al., 2000; Collins, 2005). Thus leadership in organisational change literature, while focusing on learning, has struggled to overcome the dominant view of leaders as managers of linear processes (Hannah & Lester, 2009). This is the same challenge that using a complexity approach to development faces.

A more dynamic approach to organisational learning focuses on strategic renewal as the underlying process of interest (Crossan, Lane, & White, 1999). This highlights an inherent tension that exists between assimilating new learning (exploration) and using previous learning (exploitation), and distinguishes between two types of learning that are occurring in organisations; learning from the past and new learning that leads to innovations. The paradoxical nature of exploration and exploitation resonates with the paradox of conservation versus creativity that is inherent in the dynamics of CASs. Typologies of leadership such as transactional versus transformational leadership are used to describe the contradictory behaviours that a leader must master in order to support both exploration and exploitation (Bass, 1990; Jansen, Vera, & Crossan, 2009). Recent criticism, however, points out that these

models continue to be based on dyadic based leadership, and applying them to complex and multidimensional situations can be problematic (Yukl, 2009). Multidimensional models of leadership are better suited to the complexity of organisational behaviours.

One such model is Quinn's (1988) competing values model of leadership roles, in which eight leadership roles are identified (innovator, broker, producer, director, coordinator, monitor, facilitator and mentor) and are placed within four competing models of leadership (open systems, rational goal, internal process and human relations). Each model of leadership corresponds to a combination of a focus on organisational stability or flexibility combined with concern for external or internal aspects. A significant contribution of this model is to add to stability versus flexibility (exploration versus exploitation), a distinction between rational organisational goals (explicit goals of the organisation) and strategic goals related to adaptation and resilience within the environment. Boal and Hooijberg (2001) make a similar distinction between two aspects of leadership; one of supervisory leadership 'in' organisations (that focus on processes for production) versus strategic leadership 'of' organisations. A picture of complex interactions between competing leadership roles and organisational goals, internally and externally, begins to emerge.

Building on such models, some have suggested that organisations should be seen as CASs (Boal & Schultz, 2007; Uhl-Bien et al., 2007). These efforts attempt to overcome a 'top-down' bureaucratic view of organisations and leadership and develop models based on self-organisation and resilience. These result in views of leadership across multiple levels and within multiple arenas. A considerable development has been made by the complexity leadership theory (CLT) of Uhl-Brien et al. (2007). CLT sees leadership as "a complex interactive dynamic through which adaptive outcomes emerge" (Uhl-Bien et al., 2007, p. 314). It highlights the intertwined nature of three leadership roles: administrative leadership; adaptive leadership; and, enabling leadership. Administrative leadership refers to the formal managerial roles that plan and coordinate activities and has been the main focus of leadership theory so far. Adaptive leadership is "emergent change behaviours under conditions of interaction, interdependence, asymmetrical information, complex network dynamics, and tension" (Uhl-Bien et al., 2007, p. 309). Enabling leadership is responsible for fostering the conditions that catalyse adaptive organisational behaviour.

All three types of leadership of the CLT model occur across hierarchical levels of organisations. Such multilevel theories of leadership and organisational learning recognise that conditions for catalysing learning and adaptations require leaders to be "social architects and orchestrators of emergent processes" (Hannah & Lester, 2009, p. 35). This shift towards processes and networks is consistent with the approach taken in this study and shares similar features to other multi level models (Nonaka, 1995), recognising three levels of leadership in organisations; the individual (micro), network (meso) and systems (macro) levels. At each level, leadership is performed by individuals working within social networks. Strategic leaders work at the macro (system) level, meso levels are made up of middle level managers, while the micro levels refer to individuals within organisations. In this chapter, I will use the terms 'strategic' for system level leadership, and 'middle leadership' for the meso level network of leadership.

Strategic leadership is the most studied level within organisations (Boal & Hooijberg, 2001). Much of this work has focused on how such leaders influence followers, and has provided a number of valuable leadership models, such as charismatic (Gardner & Avolio, 1998), transformational (Bass, 1990) and visionary (Nutt & Backoff, 1997). Recently, the focus on adaptation and learning have led to what Boal and Hooijberg (2001) call 'emergent' leadership theories that emphasise social intelligence and behavioural flexibility. Similarly, a complexity approach has produced a 'transcendent' strategic leadership model, identifying three levels of action for strategic leaders; the self, others and the organisation (Crossan, Vera, & Nanjad, 2008). Leadership of the self refers to the capacity of leaders to deal with change, and authentic (Avolio & Gardner, 2005) and spiritual (Fry, 2003) leadership models focus on these personal qualities of strategic leaders. Leadership of organisations refers to the visionary and systems level approaches that relate to strategic choices for organisations within the environment.

Strategic leaders in Kuna communities are the *sailagan* and other spiritual leaders who facilitate the *onmaked* system of governance. The skills used and characteristics exhibited by these leaders for the three levels of leadership (self, others and organisation) will be analysed in relation to fostering adaptation.

Middle levels of management are more often studied within network approaches than leadership theories. Chapter 8 discusses Kuna networking practices, recognising that networking is a fundamental aspect of CASs behaviour and pivotal to adaptive

capacity. In this chapter, analysis of middle leadership in Kuna communities will focus on leaders who participate in the support networks of the *onmaked* system of governance.

The micro or individual level of leadership is important for adaptive capacity in terms of the critical role of individuals as knowledge catalysts (Hannah & Lester, 2009). Chapter 7 looks more specifically at personhood development in Kuna collectives, and the qualities that individuals bring to adaptive collectives. In this chapter, the micro level of leadership is addressed implicitly in terms of the participatory nature of the *onmaked* system of governance through which adaptations emerge.

The key challenge of complexity and use of a CASs approach is to sift through the embedded levels of processes and leadership roles to distinguish between instrumental roles and roles that support self-organisation, and how they mesh together. The *onmaked* system of governance is 'entangled': "Entanglement describes a dynamic relationship between the formal 'top-down', administrative forces (i.e. bureaucracy) and the informal, complexly adaptive emergent forces (i.e. CAS) of social systems" (Uhl-Bien et al., 2007, p. 305). Using this framework, we can begin to respond to the challenge of understanding how leadership supports both instrumental and self-organising behaviours.

I begin the analysis of Kuna leadership by building a picture of the entangled leadership system of community governance. Community leaders are approached first through their administrative leadership roles, as a vehicle for beginning to visualise the levels of leadership that exist within the *onmaked* system, and the types of individuals that are the champions, facilitators, enablers and visionaries of collective adaptive capacity.

6.3 Community Leadership Roles

In Chapter 3 I introduced Kuna Yala as an evolving IBCS. Within Kuna Yala, the two field sites, Ukupseni and Colebir (subsystems of the IBCS) are in a state of constant change, evolving through interactions with the wider social and ecological systems. Before I can distinguish between instrumental and self-organising aspects of leadership roles in communities I must first describe leadership roles within their natural context. To do this, I employ an artificial distinction between leadership roles and skills that are born of what today is referred to in communities as the *dule igar*

system, and the roles that have been created as a response to increased interconnections in more recent times and are thought of as 'modern' adaptations of the system.

There is no real separation between *dule igar* and 'modern' characteristics of community governance; indeed it is the ongoing adaptive and self-organising Kuna process that has produced the complex *onmaked* system used today. I employ the artificial distinction for analytical clarity, helping to identify changes in instrumental leadership roles through time. Noticing these changes enables an understanding of the different skills that are necessary and how they are developed for different aspects of leadership. This clarity of roles and skills is important for analysing adaptive leaderships.

In taking this approach, I acknowledge that there is a danger of simplifying what is an ambiguous and fluid relationship between the reality of communities today and what is thought of as a historical system. Today, the *dule igar* system and its leadership are in decline, so in using this analytical distinction it might seem that I provide an idealised view of community processes. While I take care to provide an accurate account of the *dule igar* system within the context of Ukupseni and Colebir today, I also intend to describe practices that appear to have supported adaptive capacity historically, a necessary step to build insight into how leadership development is impacting upon adaptive capacity of communities in a globalised world.

6.3.1 *Dule igar* leadership roles

The *dule igar* system can be though of as the socio-cultural collective Kuna system which stories of the *Bab Igar* claim to have originated from the teachings of the prophet *Ibeorgun.* This 'traditional' system has developed through interactions with other socio-cultural systems (such as during the early colonial period and more recently) and cannot be defined as 'purely' Kuna. Today, in Ukupseni and Colebir, people refer to a practice as part of *dule igar* when identifying what they consider to be distinctively Kuna, and their view may not be an 'accurate' representation of the development of a cultural system in isolation, it is a way in which one can distinguish differences between the past and today. There is no doubt, however, that the level of interaction between the Kuna and non-Kuna world has steadily increased through

globalisation, creating a current system that is highly interconnected compared to the Kuna system at the time of colonisation.

Thorough descriptions of leadership roles in Kuna communities have been undertaken through extensive ethnography[8]. Howe (1974) separates his description of leaders as political and ritual specialists and Chapin (1983) follows this model. In considering leadership in relation to adaptive capacity, a distinction between spiritual and political leaders and the different skills required for each is useful.

Spiritual leaders of *onmaked nega*

The Kuna are highly spiritual people in their daily practice as individuals, families and communities. Kuna society is organised around and based on this spirituality. Spiritual leaders are known as *Bab Igar durdasmala* (those who have studied the *Bab Igar*), which refers to the many years of study required. Becoming a spiritual leader in the *onmaked* system is a process of personal development that can last a lifetime. There is a hierarchy of roles in the *onmaked* system of spiritual leadership. Usually, one enters the system as a *sualibed* (carved stave holder), the policeman or helper, in charge of keeping order in the community, announcing gatherings and generally being a helper in *onmaked nega*. Some people remain in the position of *sualibed* for most of their life.

The highest ranking leaders are the s*ailagan.* The position of *saila* is one of status, based on cultural knowledge, conduct, and the ability to speak and perform in public. There are as many *sailagan* in a community as there are people willing to study and take on the position. At the time of the fieldwork there were six in Ukupseni (population of 1822) and three in Colebir (population of 327). The role brings much respect but also much responsibility. *Sailagan* are usually older, as it takes a lifetime of study and practice. They also require more time to practice, chant and attend to people's spiritual needs. This is not to say that *sailagan* do not participate in daily productive activities, the younger ones do, and often they are also leaders of agricultural groups.

One of the most important roles of the *saila* is in leading collective prayer (the practice is known as *Bab se gole* – calling to god) in *onmaked nega* by chanting stories of *Bab Igar* (see Chapter 3 for details on the *Bab Igar*). During these chanting

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[8] See for example Holloman (1969), Howe (1974; Howe, 1986) and (Chapin, 1983).

sessions, two *sailagan* sit in hammocks next to each other in the middle of *onmaked nega* while the benches around them are filled with members of the community, the audience. One of the *sailagan* is the lead chanter and the other the supporting chanter. The stories that are told through the chants are about creation of the world, oral history dating back to the organisation of Kuna society, and other historical narratives about spirituality, religion, moral conduct and collective well-being[9].

The connection between the chanting of the *sailagan* and the audience is made through the interpretations of the chants by the *argar*. The *argar* interprets the chant, revealing the underlying message which is then related to current affairs and social conduct. To become *argar* leaders must ideally have a high level of cultural knowledge, have participated in *onmaked nega,* and be familiar with the stories of *Bab Igar* and the chanting of the *sailagan*. In Ukupseni and Colebir it is common today for leaders who are active in *onmaked nega* to be elevated to argar before they have acquired a high level of cultural knowledge. These new *argar* learn about *Bab Igar* through their practice, some do take time to study under *sailagan* while others do not. *Argargan* who are particularly skilful and would like to become *saila* study the chants and practice in order to be elevated to the position

Political leaders of *onmaked nega*

According to the stories of the *Bab Igar*, the prophet Ibeorgun also brought politics to the *onmaked* system. In the *dule igar* system spiritual leadership and political leadership blend within the *onmaked nega*. Howe (1986) distinguishes the two roles of *onmaked nega;* the spiritual nurturing he calls the 'singing gathering' and the political and administrative process he calls the 'talking gathering', this distinction is also followed by the Comarca level congresses (see Chapter 3 for more detail). The blending of spiritual and political leadership continues to be the case in both Ukupseni and Colebir today (this is also the case in Gardi Sugdup as reported recently by Martinez Mauri (2007), and most other communities).

The spiritual leadership roles and duties of the *sailagan* are meshed with their political leadership roles. In Ukupseni, three *sailagan* are chosen by the community to undertake administrative duties and represent the community formally. The *saila dummad* (highest ranking saila) stands alone at the top of the hierarchy, with the

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[9] Both Sherzer (Sherzer, 2001) and Howe (Howe, 1986) provide transcripts and detailed descriptions of both the specialised language and the events of chanting sessions.

second and third *saila* supporting when necessary. The rest of the *sailagan* also participate in political decision making and processes, but they do so on a par with all other spiritual leaders of *onmaked nega*. So while the meshing of spiritual and political roles continues, there is a distinction between some *sailagan* who have administrative duties and the rest that do not.

Howe (1986) describes for his field sites (in the 1980s) a hierarchical system in which all *sailagan* are ranked, and while the *saila dummad* stands alone at the top, the rest all share responsibilities in political and administrative matters. The low numbers of *sailagan* in Colebir make it difficult to assess where it sits in the emerging trend towards separation of the spiritual and political roles of *sailagan* in communities. However, the same *saila* has held the *saila dummad* position in Colebir for the last seven years, since his predecessor passed away, and with other aspects of the *onmaked* system in Colebir it appears to me that there is some similarly to what Howe describes. The implications of a trend towards separation of the spiritual and political are important for the present analysis and will be discussed in the section on entangled leadership. Here, what is important is to note that in Ukupseni and Colebir *sailagan* continue to be both spiritual and political leaders, albeit with some taking on more administrative duties than others.

Collective governance and all of the processes that take place within it depend on a participatory dialogical process. Here I use the term dialogical to refer to the spoken aspect of governance in the sense of 'generative dialogue' (Gergen & Thatchenkery, 2004) which involves sharing of ideas to construct collective decisions. I do not mean to say that dialogue in the *onmaked* system occurs through a process which is always constructive, indeed as Howe (2002, pp. 172-193) shows the workings of the Kuna gathering are highly politicised and use a mix of manipulation, persuasion and conflict to *igar amie* (find the way). In all of these collective processes, the art of speaking in public is central to leadership capacity[10]. Main speakers usually hold other leadership positions, but their role during the meetings is to enrich the debate and promote participatory decision making. The role of the speakers in *onmaked nega* is therefore pivotal, as open dialogue and the participation of leaders facilitates collective governance.

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[10] The importance of Kuna oratory has led to extensive ethnographies of Kuna language and discourse, see for example Sherzer (1990; Sherzer, 2001).

Ritual specialists

I describe ritual specialists through the different roles that are part of *dule igar*, and while all of the roles described below continue to exist in both Ukupseni and Colebir, overall, ritual activity is in decline in Kuna communities (implications of the decline of ritual for adaptive capacity is also addressed in Chapter 7 and revisited in Chapter 10). The most thorough analysis of Kuna ritual specialists and their roles is provided by Chapin (1983). As he notes (Chapin, 1983, p. 137), some confusion in the published literature on Kuna ritual specialists has arisen because individuals may hold several ritual and/or political offices at the same time. The definition of these roles through their specialised knowledge and practice does not mean that their leadership skills are limited to these roles, but rather, that their specific knowledge base is what distinguishes them from other leadership roles. In the following brief description I follow Chapin's (1983) distinction between *inmar wismalad* (those who know things, Chapin uses the singular *inmarwisit*) specialists that have a particular knowledge base that is the vehicle for their interaction and contribution to collective life, and the *nergan* (seers, shamans) who have special powers and can converse with spirits.

There are several distinguishable sub-groups within the *inmar wismalad* category of specialists. The first main group is the curing and therapeutic specialists, containing sub-groups. *Ina durgan* (medicine people, singular *inadule*) collect and administer botanical medicine. They learn how to identify, collect, prepare and administer the medicine. They generally work from a diagnosis, some today even work from a diagnosis made by Western health practitioners. Most *ina durgan* learn more than one sub-specialty in their lifetime. They often also learn curing chants. Those who know and use these chants are called *igar wismalad* (those who know the paths or ways). There are several sub-specialties of *igar wismalad*. Chapin (1983, pp. 147-148) describes 11 major chant traditions by type of illness; for example, possession by an evil spirit, a fright caused by seeing a snake or other experience.

Sikwi kaed (literally bird catcher) are female midwives[11]. They are involved with the preparation of women for child birth and play a major role in the later stages of gestation. In Colebir, one of the few communities with no health centre, the midwives manage the birth with a few assistants, in a birthing house, and the help of an *inadule*.

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[11] Also known as *muugan*

Where there are health centres, they do not fully manage the birth, but they do still continue to play an important role during gestation and are often present at the birth.

Beyond the rituals of curing, collective life in Kuna communities includes many other rituals for which specialist roles exist. The *masar dule* (man of the cane) manages the funeral rituals through chanting the *masar igar* – (the path of the cane). The chant gives life to the canes that are resting by the hammock and are the guides of the deceased's soul, guiding it on its journey to its final resting place. Another highly regarded specialist is the *absoget* (converser). A description of the *war uet* ritual in which collective healing is facilitated by the *absoget* is provided in Chapter 7. The *absoget igar* (path of the converser) is learned and performed by the *absoget*. Through chanting the *absoget igar* during the collective ritual that involves smoking tobacco, the *absoget* guides good spirits in their journey to expel evil spirits. The chant is long and difficult to learn making the *absoget* one of the most revered specialists.

Perhaps the best known ritual practice of the Kuna is the coming of age ceremonies performed for young girls. A description of the entire process is provided in Chapter 7. During each stage numerous specialists facilitate collective practice. The *sabdur guanet* is the collector of a fruit used to dye the young girl; the *sug kaed* collects crabs that are used in the initial ceremony. The *gandur* (short for *gantule*) is the master of the *inna* ceremony involving consumption of a fermented maize and sugar cane drink. He performs the long chant and manages a group of helpers with various tasks – to carry water, blow tobacco smoke, keep lanterns alight etc.. The female specialist, the i*et,* manages the cutting of the young girl's hair also with a team of helpers. All these specialties require training in both knowledge and practice. The *gandur,* however, has the lead role as facilitator of the culmination of the process, and requires training and study over an extended period of time.

The *nele* is distinct from all other specialists. As a Kuna spiritual doctor the *nele* has supernatural powers that permit entry into the spirit world. The key capacity that distinguishes the role from all others is the ability to diagnose through seeing into the spirit world. They are able to communicate and manage the spirit world, and use their dreams to acquire knowledge. The other distinguishing factor is that the powers of the *nergan* (plural form) are innate, they are born with them. At birth, the midwife can tell if the newborn has the mental abilities of a *nele,* possible both in boys and girls. The knowledge they use is learnt through dreams while they may also learn curing specialties.

6.3.2 Extended leadership roles

With increase in the interconnections between Kuna communities, the rest of Kuna Yala and the environment beyond, there is a progressive need for new leadership roles. This phenomenon is not new and has been occurring at least since the Kuna began engaging directly with foreigners after colonization. The *onmaked* system that has been described so far as being a blend of spiritual leadership and political and administrative structures has been built upon and adapted to include new positions and leaders with new roles that require new skill sets. The aim in the following sections is to build a picture of the diversity of leadership roles, skills and capabilities that are part of the entangled governance in Kuna communities today.

Community secretaries

Community spiritual and political leaders such as *sailagan* and *argargan* at times travel to other communities. They do so to participate in chanting sessions and to organise community matters. Increasingly, travels take them outside the IBCS to negotiate with merchants or politicians. The first helpers of Kuna political leaders were interpreters who spoke Spanish and/or English (Howe, 2009). In the 1920s communities formally acknowledged a role for secretaries, and writing has since become increasingly important in Kuna politics (Howe, 1979). Today, in order to assist the authorities of the community in political tasks within and outside their communities, an extended team of helpers forms part of the political system. The secretary continues to be the main support Figure, and is responsible for keeping notes on daily proceedings in *onmaked nega*, reading, translating and writing community correspondence and accompanying the *saila* on official missions as a guide and translator. Today, secretaries must speak, read and write in Spanish as most of their duties, other than dialogue in *onmaked nega,* are performed in Spanish.

Community administrative leaders

Apart from processes occurring within the *onmaked nega* proper, the day to day functioning of Kuna communities is managed through a highly organized system of committees. The committees function through a horizontal structure, answering to the *onmaked* collective. In Ukupseni, there is an added layer of centralised administration called the 'junta administrativa'. Committees concerned with administration of

community assets (the telephones, the airport, the dock, etc.) report to the junta administrativa, which in turn answers to the collective through the *onmaked* system.

Committees that are responsible for tasks that relate to cultural processes of collectivity such as trail maintenance or *inna* ceremonies are managed by people with recognized knowledge in these areas. Leaders of committees also must engage with the *onmaked* system, so leaders who have been speakers and advisors in *onmaked nega* are usually chosen for these positions. Not surprisingly, some of the ritual specialists are often chosen for these leadership positions within the committees – discipline, respect and commitment to the collective are all obvious characteristics of this group of leaders. However, those who perform the daily tasks of the committees and are the public servants of the community are required to have a basic working knowledge of mathematics and Spanish in order to do paperwork, keep accounts, write receipts, etc.. These positions are therefore often filled by younger people who have had some formal education in the Panamanian system.

'Intellectual' and 'professional' leaders

Today many Kuna are educated outside of the Comarca, producing a significant number of high school and tertiary graduates, some of them studying beyond Panama. Most of these graduates live outside the Comarca. They are often called 'intellectuals' or 'professionals' by the Kuna and play a fundamental role in Kuna politics and decision making. Many Kuna families living outside their communities maintain strong ties with their communities. In most cases the family home is still considered to be in the community, and there is constant travel, communication via telephone and sending of goods to and from the community. Like all urban dwelling Kuna, professional Kuna therefore, are able to stay connected to their communities and to provide support through their expert knowledge.

There are several ways in which these leaders participate in community politics and decision making. They may be officially recognised as community *sikwimala*[12] living in the city and carrying out collective duties. Ukupseni has had a community centre in the city for many years and *sikwimala* continue to be involved in running

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[12] The term literally means bird, Howe (2002, p. 112) suggests this refers to their writing skills (starting from secretaries as support Figures) that look like bird scribbles while Martinez Mauri (2007, p. 300) suggests this is due to their voyaging and returning with new skills to support the community. Today, it generally refers to all helpers, including those with and without official positions within administrative or political structures.

community matters from the city through the centre. Another way professionals can participate is through travelling to their community and becoming personally involved in meetings in *onmaked nega* where their experience and knowledge outside the community contributes to decision making. Their expertise is recognized by the collective and, as for all learned people, they are expected to become involved, to advise, and be speakers in *onmaked nega* when they are in the community. In Ukupseni, there are a number of retired professionals who have returned to the community and are active in the *onmaked* system, some of them taking on official leadership positions within various committees.

6.3.3 Diversity in the *onmaked* system

The *onmaked* system in Ukupseni and Colebir is a joint spiritual, political and administrative system and is understood throughout this thesis as the sum of a historical and ongoing process of self-organisation. It is both conservative and creative, and it blends the *dule igar* system with new and foreign knowledge and practices. Administrative leadership is comprised of a mixing of *dule igar* leadership roles and extended leadership roles.

Strategic leaders are spiritual and political leaders of *onmaked*. Middle leadership levels are made up of both *dule igar* roles and extended leadership roles. Today, the extended leadership roles are pivotal to the functioning of administrative leadership, through directly carrying out managerial tasks, (e.g. the secretaries, and work of committee members) and indirectly through participation in *onmaked* dialogue. The *sikwimala* are important additions to the system, and have been shown to be pivotal in networking and as mediators with the external environment (this can be both positive and negative for the collective) (Martinez Mauri, 2007).

The day to day business of community life is managed through daily meetings in *onmaked nega.* Protocols that have evolved historically continue to be used to facilitate a process of open dialogue for all meetings. Strategic leaders act as facilitators, ensuring that protocols are maintained. The collective as a whole, however, also plays an important role in keeping strategic leaders in line, and ensuring that protocols are maintained. Middle leaders are the main participants in dialogue, enriching discussion, sometimes through providing their own expert opinion, at others through analysis or voicing an opinion, and more often than not through using persuasion to further individual or group goals. During meetings,

whether just a daily gathering or meetings for a specific purpose, any community member (the micro level) interested in what is being discussed can join the dialogue.

6.4 Kuna Leadership Development

In this section, leadership development is discussed in terms of preparing leaders for the multitude of roles that are a mix of *dule igar* and extended roles. Like the entanglement of administrative and adaptive leadership roles within the *onmaked* system, development of the different roles is also entangled. Leadership development focuses mainly on development of skills for administrative or explicit leadership roles but, as will be highlighted, leaders also acquire general leadership skills through their training. I begin with the process of developing leaders under the *dule igar* system, which continues to be used for the development of strategic (spiritual and political/administrative) leaders who facilitate community processes, and middle leaders who engage in ritual practice.

6.4.1 Ibeorgun's School

According to the stories of the *Bab Igar*, Ibeorgun's teachings were not always followed by leaders. The story of the *ner dummagan* (great seers) (Wagua, 2000, pp. 98-104) tells of the arrival of the great *nergan* who became researchers, using their powers to travel through the different realms of life and ways of knowing to reconstruct the knowledge of Ibeorgun. While the *nelegan* were not perfect, and at times engaged in rivalry, they are recognised as the fathers of the Kuna knowledge system. Each *nele* set up a school, a continuation of Ibeorgun's school, each specialising in a particular aspect of collectivity. These schools are not to be understood in a literal sense, but rather as different traditions of teaching that emerged under each *nelegan*. The followers of these traditions have through history been taught the stories of the *Bab Igar* and have been encouraged to analyse and reflect upon the messages they hold. Cultural leaders have been formed through this system since then, and still today a few strategic leaders such as *Saila Dummad* Gilberto Arias, one of the high chiefs of the CGK, and Rafael Harris, the head *argar* of the CGCK, have been a part of the age old process of learning to become a spiritual leader of the Kuna peoples.

The process of forming and grooming leaders through Ibeorgun's school has several distinct stages that are generic to all specialties, and some more specific to certain types of leaders. First I will describe the generic aspects and then the specialised processes for each type of leader are described.

Preparation for the learning

Learning to become a leader through the *dule igar* starts at a young age. People are born with a certain potential for learning the different *igar* that is detected at birth by the midwife and expressed as "*gurkin nika daniki*" which literally means the baby is coming with lots of hats or mental capacities[13]. The quantity and type of capacities a person is born with determines their potential for becoming a specialist leader. The *nele* is born with the innate super natural powers that are later developed. According to a midwife in Colebir, most people are born with some capacity to learn things; a distinction therefore is only made when the newborn shows great capacity[14]. Kuna leadership begins with an innate potential to learn and lead, and while everyone has some potential, only a few have great potential.

The decision to begin preparation for learning is made by parents of potential leaders. The preparation initially involves focusing energy and motivation through medicinal baths while in isolation, within a *surba*. A *surba* is a small room that is built inside a house (see Chapter 7 for more details). It becomes an area where the person who is receiving the treatment is kept in isolation during a specific amount of time (usually eight days). It is a way of focusing energy for mental and physical preparation. Today, leaders interpret the travel of *nelegan* described in the *Bab Igar* as a process of mental focusing that allows concentration required for study and analysis. In the words of a leader of CGCK:

> *To begin with, the process of learning is in the surba, a house that one must*
> *stay in to do the therapeutic baths, and while there they can go down to the*
> *different levels of the world. It's not that they physically go up to the sky and*
> *down into the earth, it is about the person's thoughts and dreams, opening the*
> *mind, gaining capacity to learn through concentrating on what you will have*
> *to do.* (L1)

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[13] Chapin (1983, p. 138) explains that the word *kurkin* refers to a spiritual entity which determines a person's predisposition.

[14] According to Chapin (1983, p. 138) the sign of a person having the capacity to be a *nele* is to be born with the fetal caul (membrane) covering part or all of the face.

The person receiving treatment is in isolation, where there is a lack of stimulation, focusing thoughts on the reason for being in the *surba* – in this case preparation for learning sacred knowledge and skills. The person leaves the *surba* with a clearer sense of purpose and motivation, and mentally prepared for learning. The process of learning and becoming a leader through *dule igar* begins in earnest once the person has decided to fulfil their potential to learn. At this stage, the process followed depends on the specific role.

Specialised knowledge

Nelegan are distinguished from all other specialised knowledge holders by their innate powers. For all other specialist leaders a long period of dedicated study is required to acquire the knowledge needed to perform their practice. Based on the knowledge to be taught, the practice of teaching and studying of ritual specialists varies. Each process is tailored to ensure that the student has not only the knowledge, but also the skills to perform their duties when they graduate. All specialists' training, however, shares an initial phase of building a relationship between the student and teacher, during which the student is counselled about social conduct and the responsibility of learning and practicing *dule igar*. Howe (1974, p. 231) argues that the relationship between teacher and student is metaphorical to that of a father and son. The initial stage might last many years, and also serves as a filter to make sure only the truly dedicated and motivated students proceed. It is of particular importance when the student is young and is learning their first *igar*.

Becoming an *inadule*

Learning to become an *inadule* is a formal process with developed protocols for both the student and the teacher. An apprenticeship structure is used for this study. When a student is interested in learning a type of medicine, they must find an appropriate teacher. Some times this teacher is a close family member, or it may be a recognized specialist in one's community, and at other times the student must travel to a different community if there is no specialist in their own. During 2008 an *inadule* from Colebir, who was already practicing several specialties travelled as far as the Bayano region of the Madungandi Kuna Comarca to learn how to mend broken bones. Howe (1974, p. 232) also mentions that the practice of travelling far to learn medicine, especially to Bayano is thought to be prestigious. Chapin (1983, p. 147) notes that

"dedicated medicine men must study under as many as ten or more different specialists, and sometimes travel far afield to spend months at a time expanding their knowledge with especially distinguished practitioners."

The student must frequent the teacher's house and assist in daily chores during which time the student receives counselling on correct behaviour, morals and values, community responsibilities, etc.. Once the student has adequately shown himself or herself to be worthy of receiving the knowledge, the second phase of the education is entered. During this phase the student becomes the *karpa sed* (basket carrier) of the teacher, an assistant in the field work of collecting plants. Initially, the teacher will focus more on the conduct during collection of the plants – asking permission to take the plants, collecting from an appropriate place, controlling over harvesting, appropriate handling of the plants during collection and transport back to the community, etc..[15] (see photos 6.1-6.2).

Photo 6.1 *Inadule* collecting roots for medicine

Photo 6.2 Preparing *ina* for transport back to the community

While the student assists the teacher, they also learn the classification of plants and their different uses. Knowledge of plants is not considered to be the central aspect of

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[15] For a full account of the practice of *ina durgan* see Chapin (1983, pp. 207-308).

study; it is the process that is of vital importance in order for the plants to be able to fulfil their potential for healing. Students reported that although they are allowed to ask questions, they are not always necessarily answered. The teacher responds to the queries when he feels the student is ready for the information.

Once the medicine has been brought back to the house, the apprentice must also assist in the final preparation of the medicine. At these final stages of training, the student is slowly let into the *burba* of the knowledge. Chapin (1983, pp. 565-567) translates *burba* as having several meanings, the first most common being that of "the spiritual counterpart, or 'soul' of everything on earth". The second is a more specific use in the context of ritual knowledge in the form of 'origin histories' that allow specialists to manipulate curing spirits. The third meaning he gives is probably the closest to my interpretation of *burba* as fundamental to leadership development. In Chapin's (1983) words:

> The 'deep meaning' of the symbolism of chants, or an understanding of the concepts and symbolic meaning of disease causation, curing and the workings of the spirit world are often called *purpa*. Curing chants by themselves are not *purpa*: knowledge of what they mean is. (p. 566)

Kuna cosmology provides a view of the world as being interconnected, and all things are said to have *burba* – to have life, to have spirit, and it is often used when speaking of people, animals, ideas and processes. When something has *burba,* the material aspects connect to the sacred. The term is used to show the interconnections between all things, all with equal value. Thus in the context of learning to become an *inadule*, the *burba* of the knowledge is the sacred meaning that provides the interconnection to the cosmos. An *inadule* spoke to me about when his teacher taught him the *burba*.

> *Finally, he told me about the burba, everything, all about the responsibility you hold when you go to the forest to collect medicine, when you collect it to cure someone to help someone, you have to be responsible, what you must do, how will you put your canoe in the water when you are about to go to the forest to collect medicine, how you will paddle, how you will hold your machete, everything, when I was graduating he told me all these secrets, why Bab Dummad made the world the way he did, how we were made, how we were born and how we are all part of each other and everything.* (L2)

The *burba* is learned in the form of a chant that is performed while the plants are smoked by burning cacao seeds which is the vehicle for all life, and its purpose is to tell the plants what they are to do and to guide them on their journey to healing. Learning the chant for success of the medicine requires learning about the relationship of people to nature and therefore the cosmos. Theoretical and philosophical analysis of being in the world, the *burba*, is left for the end of the process when the teacher is confident in the ability of the student to manage the information correctly and uphold its sanctity.

Learning other ritual specialties

The process described for learning to become an *inadule* is similar to that used for learning other ritual specialties. A relationship between the teacher and student and the practice of an apprenticeship is also employed. *Igar wismalad* spend their time learning the chants, acquiring strong mental skills to remember the chants and to be able to perform them. The practice of leaving the *burba* till the end of the learning is also employed, theoretically integrating their specialist knowledge and practice into an appreciation of how all is interconnected. With continued training in various specialties throughout life, this philosophical and theoretical framework is further developed.

Learning the *Bab Igar*

The role of spiritual leaders requires wisdom and life experience. Kuna spiritual leaders must also have deep knowledge of the stories of *Bab Igar*. They gain this knowledge through a formal process of learning and guidance under a teacher who is chosen for his wisdom and extensive knowledge. It is not uncommon today in Ukupseni and Colebir for leaders learning ritual specialties to be chosen as spiritual leaders and to then begin study of *Bab Igar* under recognised spiritual leaders. It is therefore likely that training in ritual practice has built a basic understanding of Kuna cosmology and philosophy and the interconnected nature of the world, upon which *Bab Igar* training is built.

   Spiritual leaders endure lecturing on social and personal conduct through their studies. This does not necessarily mean that spiritual leaders are moral in their behaviour. As Howe (1986) illustrates, the collective engages with the morality of their leaders with ambiguity. On the one hand *sailagan* are expected to avoid heated

discussion, to be honest and to conduct them selves with dignity. On the other hand, the collective is relatively tolerant of misbehaving *sailagan*. This mix of tolerance and high expectations combined with a blurred approach to misconduct is an indication that on the whole the Kuna view their leaders as fallible and imperfect. The ambiguity supports democratic processes, for a *saila* is always reminded of their dependence on the collective. What is important to note here is that training to be a spiritual leader includes lecturing on moral behaviour, so that spiritual leaders in formation become aware of the high demands the collective will place on their public and personal lives. They know what is expected of them even if they fail to meet the standards.

The role of a spiritual leader is to guide people in remembering, understanding, interpreting and analyzing the stories of *Bab Igar* and helping them to keep it alive in their daily practice. This requires analytical skills and the ability to reflect upon the learning. These skills are consciously instilled in students through taking a special interest in the ongoing daily practice of debates and reflections that occur in *onmaked nega* and being encouraged to ask questions and dialogue with their teacher regarding this learning. Unlike training in other specialties, when learning to become a spiritual leader, asking questions, analysing and reflecting upon the stories of *Bab Igar* is encouraged.

6.4.2 *Dule igar* leadership characteristics

Leadership development practice for spiritual and ritual leaders under the *dule igar* system has been described as consisting of a generic process that focuses on the preparation of the student and nurturing the person into a leader, and a specific process that is appropriate for teaching the skills and knowledge for each specialty. General leadership skills and specific specialist skills are developed through one integrated process. Two general characteristics of *dule igar* leaders I discuss below are shared by different leadership roles and are relevant to this analysis of adaptive leadership. Both of these characteristics are able to be nurtured through *dule igar* leadership training, but it is important to preface the discussion by adding that leadership training is itself a complex system, which does not produce perfect and adaptive Kuna leaders. As individuals, Kuna leaders bring their own strengths and weaknesses to their learning and practice. What I intend to highlight is that there are some general characteristics of Kuna leadership that emerge through *dule igar*

training as a historical and evolving system, that appear to support adaptive leadership of Kuna communities.

Embodied leaders

Dule igar leadership development is a process that not only produces specialised leaders, but is also able to produce embodied leaders. When viewed together, the stages make up a holistic process. The initial preparatory phase that is shared across all *dule igar* leadership roles begins by creating an internal space for growth and learning. While I did not undertake psychological analysis of leaders before and after being in the *surba*, leaders I spoke with about their preparation expressed to me a feeling of a calmed mind that helped focus on future learning. Thus learning commences from an internal preparation for leadership.

The importance of personal preparation and cultivation of the individual who will grow into a leader continues throughout the process of learning and nurturing the relationship between teacher and student. Apprenticeship and experiential education provide opportunity for learning that changes one's practice, in learning the knowledge of medicinal plants one is becoming an *inadule*, not just learning knowledge; the role encompasses more than the knowledge gained, and is based on behaviour rather than theoretical understanding or abstract knowledge. When people chose an *inadule* for their treatment, it is important to know the specialist has studied under an expert teacher, but it is just as important to know how well he applies his knowledge and how successful his treatments are. Having studied or acquired knowledge does not make one a good specialist, it is the ongoing practice that is more important.

The practice of graduation of the specialist is a formal recognition that the student has proved himself to be worthy of leadership and has gained the knowledge needed to perform their specialty. While they might still have to prove their effectiveness as a specialist, they must also show themselves as leaders through all aspects of their lives. I have already mentioned that Kuna leaders are not infallible or perfect, and the collective approaches the issue of morality of leaders with ambiguity. None the less, *dule igar* leadership development uses a process that creates a space for leaders to embody their role because they become leaders, albeit imperfect ones, instead of just learning knowledge and developing leadership skills.

Reflexive leaders

Leaders I spoke with who had *dule igar* leadership training emphasized reflection as one of the skills they had learned and use in their practice. A leader in Ukupseni who had learned several therapeutic *igar* and is also active in community committees said that it was *dule igar* training that helped him see his role as someone who has to reflect upon every situation before offering an opinion. Spiritual leaders, who undergo formal training in *Bab Igar*, go through a conscious process of building their ability to interpret knowledge, analyse it and use it for decision making. My experience of Kuna leaders is coherent with Howe's (1986) argument that individual characteristics and skills of leaders play an important part of individual leadership 'styles'. I am not arguing, therefore, that all Kuna leaders are highly reflexive, as indeed some struggle with this particular skill. The point I am making is that leadership training provides a conscious process for nurturing reflection and coupled with the practice of interpreting *Bab Igar*, which is a basic aspect of spiritual leadership, provide opportunity for developing reflexive skills in leaders.

Reflection is also a useful tool in the collective processes of debate and decision making in *onmaked nega*. Ritual specialists who have had formal training through *dule igar* are more likely, therefore, to develop skills that help them participate in collective decision making processes. These leaders form the basis of the *onmaked* system by participating regularly in collective processes.

6.5 Entangled Leadership

So far, *dule igar* leadership development practice has been analysed in terms of general characteristics of leaders which support adaptive leadership, such as embodiment of their role and producing reflection skills to be used in their leadership practice. I now turn to today's entangled leadership in Ukupseni and Colebir, to analyse how strategic and middle leadership specifically support collective adaptive behaviours.

6.5.1 Strategic leadership fostering adaptation

In the *onmaked* system of collective governance strategic leaders are the leaders that share spiritual and political roles; primarily the *sailagan* and *argargan*. Today, most of these leaders in Ukupseni and Colebir have had some specialised training through

learning an *igar* or studying the *Bab Igar*. Strategic leadership that contributes to collective adaptation and learning has been shown to require three levels of leading; of the self, of others and of the collective (Crossan et al., 2008). As strategic leaders, *sailagan* and *argargan* engage with all three levels of leadership.

Leadership of self has been identified as important for fostering collective adaptation because strategic leaders must have capacity to learn and change within themselves, before they can enable others to do the same (Boal & Schultz, 2007). Authentic leadership theories view self-awareness, self-regulation and positive moral behaviour as fundamental aspects of authenticity in leaders who use their own practice to inspire and motivate others to learn and change (Avolio & Gardner, 2005). Spiritual leadership theories focus on altruistic love of leaders showing "genuine care, concern and appreciation of both self and others, thereby producing a sense of membership" (Fry, 2003, p. 695). These leadership theories tend towards an idealised view of strategic leaders who are self-aware, self-regulated and full of love for others. I showed that the *dule igar* leadership training has the potential to produce embodied leaders through a holistic process. This embodiment of leadership requires some degree of self-awareness and self-knowing, and these are attributes I have found in some *sailagan* and *argargan*. However, strategic leaders struggle with these aspects of their roles. Self-leadership is not an easy accomplishment, even for well practiced Kuna leaders.

One of the most commonly used words to describe Kuna strategic leaders is 'wisdom'. In a learning and adaptation framework, wisdom can be seen as important for strategic leaders because it allows them to make decisions based on the application of knowledge and experience (Bierly et al., 2000). The *dule igar* leadership development process can continue throughout the life of the leader, an example of this is the *saila dummad* of Colebir who is still learning new *igargan* even after mastering more than most leaders. For this leader, it is an experiential process over a lifetime, building on his capacities to make sound decisions for the good of the collective. However, this *saila* is an exception rather than a rule in Kuna communities today. Wisdom is also produced through ongoing application of knowledge and experience. While *sailagan* and *argargan* may not be learning new chants constantly, they are using their knowledge and gaining experience through their daily practice in *onmaked nega*, building their wisdom.

Leadership of others is also important in adaptation because leaders are the motivators of others' behaviours. Charismatic, transformational and visionary leadership theories all emphasize the role of leaders in shaping followers' behaviours (Boal & Hooijberg, 2001). In one model of charismatic leadership, leaders are versed in managing meaning and construction of collective reality through their speech and communication, manipulating symbols and facilitating dialogue (W. L. Gardner & Avolio, 1998). This dramaturgical approach to understanding charismatic skills resonates well with the performative nature of *onmaked nega* dialogue processes and the high value that the Kuna place on speech making. Training to become a leader through *dule igar* requires continuous participation in *onmaked nega* where such skills can be developed and perfected. While *sailagan* are often quiet during *onmaked nega* dialogue, *argargan* tend to be the more vocal strategic leaders. Strategic leaders continue their *dule igar* training experientially through their participation in *onmaked nega*.

The four characteristics of transformational leaders - idealised influence, inspirational motivation, intellectual stimulation and individualised stimulation - (Bass, 1990) have been shown to correlate with emotional intelligence of leaders (Sivanathan & Fekken, 2002). Emotional and social intelligence are related to interpersonal skills and relationship building and sustaining (Goleman, 2006). Interpersonal skills are a major part of *dule igar* leadership training. The apprenticeship model with a strong emphasis on the relationship between student and teacher is able to cultivate interpersonal skills. Embodied leadership requires leaders to act a certain way, and to treat others with respect.

Transformational leadership has also been theorised as an important model for supporting innovation in times that require creative responses to change (Jansen et al., 2009). The characteristics described for transformational leadership are consistent with the openness that strategic leaders demonstrate. Having experience and knowledge outside the community enhances one's ability to reconcile differences, because it provides perspective within the 'bigger picture'. Historically Kuna leaders have travelled beyond their communities. Helms (1976) claimed that Kuna chiefs in pre-colonial times travelled far as a means of obtaining goods that increased their status and power. This position has been refuted (Langebaek, 1991; Martinez Mauri, 2007) and some argue that the practice of travelling evolved after prolonged contact between the Kuna and Europeans after colonisation (Gallup-Diaz, 2002). Either way,

valuing outside knowledge is an aspect of Kuna leadership today. Leaders I spoke with mentioned that their own travels have helped them be more open and to better deal with complex problems.

Valuing different forms of knowledge is not just restricted to travelling beyond communities, but is also related to reflecting on different interpretations of knowledge. The teachers of the spiritual leaders, the wisest spiritual leaders with great capacity to reflect, analyse and put knowledge into context, do not all interpret the *Bab Igar* the same way. They have different philosophical perspectives and this is seen as positive and necessary for allowing enough diversity of opinion and philosophy to keep a healthy debate alive. One CGCK leader I spoke with reported that different teachers of *Bab Igar*, under which different current strategic leaders have studied continue to produce multiplicity in philosophy and interpretation of the chants. And of this he said:

> *…the more difference there is in the thinking, the better it is for us overall, the more we have to think about it the more it makes sure we keep the stories alive, even if they change. Our method is based on this changing story.* (L1)

Bab Igar has evolved through interactions between the Kuna and non-Kuna worlds, and leadership training keeps this process of evolution alive; it is not learnt as a truth with a correct interpretation, but as a vehicle for reflection. Today, as the study of *Bab Igar* is in decline, and *sailagan* claim that there are only a few great teachers left, this aspect of strategic Kuna leadership is in a weakened state.

Perhaps the most interesting characteristic of strategic leadership that helps with leading others is the ability to be visionary. Leaders articulate the temporal aspects of collective identity (Boal & Hooijberg, 2001) formulating a collective vision to strive towards. In a complexity and adaptation framework, storytelling is a vehicle for producing an understanding of the present and its relationship to the past and the future (Boal & Schultz, 2007). In the case of Kuna spiritual leadership, the chanting of *Bab Igar* is a good example of how storytelling is used as a dynamic system of reinterpreting the 'now' in terms of the past and a future vision. The *sailagan* enable such visionary thinking through their chanting, and the *argargan* facilitate collective reflection on the stories to help identify the current situation and possible ways forward.

At the organisational level of strategic leadership conscious systemic thinking by leaders is theorised as promoting collective adaptation. Adaptive leadership at the

strategic level involves planning based on emergent needs, allocating resources to promote learning and adaptation and building strategic relationships beyond the collective (Uhl-Bien et al., 2007). In Kuna communities, the spiritual and political leaders are able to plan based on emergence through the daily *onmaked* process of dialogue, allowing flexibility and change while simultaneously maintaining a vision. Learning and adaptation are promoted through encouraging the community to engage in *dule igar* and other forms of study. Even in the current state of decline, strategic leaders continue to encourage training.

Enabling leadership also occurs at the organisational level, and directly addresses the ability of strategic leaders to deal with the tension between administrative and adaptive leadership roles and the entanglement of the system (Uhl-Bien et al., 2007). Strategic leaders are involved with managing the interface of administrative and adaptive leadership which is necessary for self-organisation. They must have a long term outlook, rather than planning for the production of adaptation. Spiritual and political leaders of *onmaked nega* are able to do this through their use of the *Bab Igar* framework. Since the *Bab Igar* is a compilation of the collective memory of the Kuna people, it sets the time frame as eternal, from the creation of the world all the way to the eternal resting place of Kuna souls. The stories tell of the successes and failures of the Kuna, of the dynamic iterative nature of natural and social cycles, and bring the past and future together in understanding the present. This holistic framework allows emergence to be understood as a product of interactions, and is the vehicle for facilitating collective processes that continue to nurture emergence.

6.5.2 Network of adaptive leadership

So far, the meshing of spiritual and political leadership roles has been shown to enable strategic leadership by nurturing characteristics and skills that are supporting of adaptive capacity. While not all strategic leaders exhibit all of the characteristics, and *dule igar* training is in decline today, I have argued that leadership training for spiritual and political leaders in Ukupseni and Colebir continues to provide a framework for supporting some adaptive behaviour, helping build a picture of how Kuna adaptive leadership potential is nurtured. Now, I turn to the complex nature of the contemporary meshing of *dule igar* and extended administrative leadership roles, which produce middle leadership. Here, the tensions between a separation of ritual

and spiritual life from administrative and instrumental roles begins to highlight the challenges of maintaining adaptive leadership.

Adaptive and enabling leadership in CASs hinges on enabling self-organisation through the interactions between agents within the system (Uhl-Bien et al., 2007). Middle leaders in Ukupseni and Colebir are the large group of leaders who form the community committees and those that participate actively in dialogical processes that take place in *onmaked nega*. The administrative roles of committee members are directly related to their roles within committees. Leaders who are members of committees are therefore elected by the collective to support the instrumental role the committee plays within community governance. For example, in Ukupseni, the junta administradora runs a community bank for which it requires leaders with knowledge of financial management and the aqueduct committee has members with technical skills which require specialised training for aqueduct maintenance. As a consequence, these middle leaders in Ukupseni today are chosen based mainly on their specialised skills as they apply to committee roles. The consequence is a trend towards less middle leaders with *dule igar* leadership training.

There are some common skills required by middle leaders that can benefit from *dule igar* leadership training. For example, capacity for managing collective tasks through the development of interpersonal skills such as those highlighted for strategic leaders. It was confirmed to me by leaders in Ukupseni that *dule igar* skills are helpful when managing community committees. One leader in particular who was involved with several community committees told me that his management skills had developed through his understanding of *Bab Igar* and interpretations of management and organisation through natural relationship such as a forest ecosystem. This does not mean that all Kuna leaders who have been through *dule igar* training are necessarily the most effective or efficient managers, but rather, that some elements of *dule igar* training are also useful for developing skills needed in administrative leadership roles. Moreover, within the entangled system, through their administrative roles middle leaders must necessarily participate in debates in *onmaked nega*, to provide specialised knowledge as well as to help in decision making. The skills needed for effective participation in *onmaked nega* include good oratory and participation in collective processes which have been shown to be developed through *dule igar* training.

In a community such as Ukupseni, with many committees and specialised pockets of community governance the challenge today is to combine general leadership skills from *dule igar* training with further study in specific technical knowledge gained outside of the community. Ideal middle leaders are leaders with a mixture of *dule igar* leadership skills and external technical knowledge. In the following section I present my findings from inquiry into how middle leaders face the challenges of maintaining adaptive leadership in the current context of increased complexity of administrative leadership in Ukupseni.

6.5.3 Dialogical leaders

To make a decision within the *onmaked* system one must reconcile the differences between interpretations of the world through *dule igar* and the *waga* (outsider) ways. The *waga* ways are not entirely separate from the *dule igar* ways, but nonetheless there is always 'new' knowledge and approaches that are entering Kuna communities. Specialized knowledge in the form of either Kuna cultural knowledge or external knowledge (e.g. a new technology) is seen as information that is equally useful. Using it adequately to make the right decision is a process that involves reconciling the differences between them; this is the process through which self-organisation occurs. While I was in Ukupseni and Colebir I witnessed numerous meetings in which arguments from different life experiences and views of the world were expressed. Open participatory dialogue allows the differences to be used to creatively build solutions. Sometimes solutions are in the form of a middle ground compromise, while at others they are entirely unexpected emergent solutions. An example from Colebir is provided in Box 6.1.

The example illustrates that the process of reconciliation of different perspectives is an integral part of the dialogical approach of *onmaked* governance. This example will resonate with anyone who has participated in collective or group processes be they in small communities or in group settings in different cultural contexts. I am not suggesting that Kuna dialogical processes are distinctive, but rather, highlighting that debate and dialogue as it continues to be practiced by the Kuna as the basis for *onmaked* governance is able to build an environment for self-organisation. The processes used to facilitate dialogue are age-old, while the problems faced are contemporary, and often knowledge required is foreign. In the rest of this section,

164

skills that leaders use to support dialogical practice in today's complex and conflicting environment are analysed.

Box 6.1 Debate over the age of collective responsibilities in Colebir

A meeting was held to discuss changing the regulation on the age at which young men must participate in communal labour. At the time of the meeting, the regulation stated that boys enter the community officially as participating members when they (i) marry, or (ii) attain the age of 18, or (iii) when they finish their studies, including tertiary education. During the four hour debate several contradictory arguments and viewpoints were expressed. One leader argued that they should not change the regulation again, since it had only been a few years since it had been established. Another speaker reminded everyone that the reason the regulation was set for 18 years old in the first place was because it was considered unfair to treat children as adults. Yet another speaker clarified that the reason the 18 years was regulated was more to do with the idea that child labour is illegal in Panama. He pointed out that he disagreed then with the regulation and he still disagrees, arguing that it is good for young men to learn to be responsible and productive. Another view supported the argument that it was positive for youth to be given duties and responsibilities and used himself as an example of someone who was raised with those values and was able to provide well for his family. Other speakers mentioned that the context in which the debate was occurring was the current pressure to build five houses in a few months, in preparation for hosting a CGCK meeting.

One leader suggested a compromise in the form of reducing the age of community participation to 15 but for the first few years allowing the young men to contribute less than the 18 and over. Several people agreed this to be a good compromise but others pointed out that it was a short term solution and that in the annual review of the community regulations that is to take place in December the regulation should be revisited, and analysed further. The decision was made and the following week six new young men joined the communal house building, one had just turned 15 that month.

Self-reflection

For leaders participating in *onmaked* governance, reconciling the often contradictory nature of the worldviews they share is a personal as well as a collective challenge. Internal conflict is often experienced by leaders. This conflict is overcome by leaders through using self-reflection. It helps to deliberately think about their own role as leaders in the community and how this connects to the overall goals of the collective and their own. This is a skill that *dule igar* leadership training can develop.

> *I have been made [into a leader] by dule igar and I was taught to think about myself all the time, to think about what I am supposed to be doing, to make sure that I am not losing the way. You know, as things change and we have to make decisions that are never the same, we have to think about what and why we do things, to keep us like trees, rooted in the earth.* (L3)

Dialogue principles

Principles of the *dule igar* system help leaders reconcile interpersonal differences and facilitate dialogue. An example is the principle of respect; respecting all people and all life forms at all times. While participating in a debate in *onmaked nega*, or even when disciplining someone, the principle of respect for others should guide actions. The president of the justice commission in Ukupseni said that this was the most important and useful principle that helps him perform his duties when delivering punishment.

> *So when people are being tried in the junta [justice commission] I think about how they are just like me, they have feelings too and I try my hardest to speak to them so that they feel good and not bad. This helps me in my job, to be fair, to do the right thing.* (L4)

Respect for each other and life is taught through *dule igar* training. It is one of the basic understandings of Kuna philosophy stemming from a direct relationship with natural systems, and a shared *burba* of all beings. This does not necessarily mean that at all times Kuna leaders use the principle of respect. In fact, as Howe (1986) shows the workings of the *onmaked* are often full of power plays and conflict which would seem far from a respectful approach. However, leaders I spoke with in Colebir after heated discussions in *onmaked nega* spoke of respect as an important collective principle, even if as individuals they failed to practice it. The point is that these

principles of the *dule igar* provide a framework that can support dialogical processes, in spite of being subject to individual failures in application.

Another principle of *Bab Igar* that is used by leaders is to be aware of and to be able to use one's 'heart' to help make decisions. In suggesting a way forward in decision making the phrase "*anmar dule gued ginne*" which means in our capacity as *dule* (term used to distinguish themselves as Kuna) is usually followed by the saying "*anmar guaget nika*" which means we have a heart. I have heard it used when challenging a rule that has been established, and a new situation requires that it be adapted or changed. An example of such an occasion was during the debate in Ukupseni over charging me the foreign research fee as established in the community regulations. After some debate and disagreement, the *saila* confirmed the majority view that I was not to be charged; he used these expressions to justify being flexible about the regulations. I have also heard it in meetings as a way of justifying a decision because it is what makes the Kuna system different from the Panamanian – it allows one to use their heart as well as their head in making a decision.

The skills shown to be important are not related to specific knowledge sets or practical skills but rather are concerned with facilitation and dialogue within a holistic view of the world, where the whole of the system requires different parts and different opinions that need to be brought together. They are skills largely developed through the *dule igar* leadership development system, but as complexity increases so does the challenge that leaders face. This quote from a leader in Ukupseni sums up this challenge.

> *I have not been to school, I have not been to the University, but I know what a leader is. I have done my own analysis on what it means to be a leader, of how to become one: if you want to become a leader, you have to know its igar, because it has one you know. You have to think "what does it mean to be a leader?" some people think that they are good leaders because they speak a lot, or they speak well, but that's not enough, if you want to be a leader you have to understand its burba as a person, a dule, you have a heart, you have a head, you feel, you think, you have to think about how to bring that all in to do the right thing, say the right thing, to lead well. It's not about having just the one way, but bringing them all together.* (L3)

6.6 Kuna Leadership Development as an Adaptive Process

I have argued that *dule igar* leadership development can produce embodied leaders with appropriate skills for facilitating adaptation at strategic and middle leadership levels within communities. These same skills are used in the Comarca governance institutions to similarly support adaptive capacity. Leadership development through the *dule igar* system is, however, in decline in Kuna Yala, and has become an area of recognised weakness of the Kuna self-determining system. This challenge provides an opportunity to illustrate how the Kuna use their adaptive capacity to adjust their system to ensure well-being and sustainability.

6.6.1 The challenge of leadership

The current complexity of community management systems requires leaders with specialised knowledge that cannot be attained through the *dule igar* system. This is leading to an increase in leadership roles being filled by those qualified for administrative leadership through their specialised knowledge or skills but not general skills that support adaptive and enabling leadership. Combined with this challenge, is a reduction in the number of potential leaders in communities and training through *dule igar*. The Western education system in the Comarca has attracted children with good analytical and learning skills, and in some respects has replaced the formal education received through *dule igar*. Thus, potential leaders who are born with the capacities for leadership are joining Western formal training. The increasing level of migration out of the communities to the cities draws with it the potential leaders that end up following Western education, with a proportion being lost to their communities. The result is a reduced amount of potential leaders entering *dule igar* training and an increase in leadership roles that are filled by leaders without *dule igar* training.

6.6.2 Revitalising Ibeorgun's School

The stories of *Bab Igar* remind of times in history when Kuna collective life was in ruins, when corrupt leaders abused their power, did not follow the teachings of Ibeorgun. The *nelegan* helped in the process of recovering the lost knowledge and training others in their traditions to ensure continuation of the knowledge. Today,

leaders are recognising that these virtual schools have been weakened and they need to be revitalised.

In communities, there are debates about the need to change practice for recruitment of new leaders. In both Ukupseni and Colebir, new *argargan* and *sailagan* are selected when there is a need for more or new leadership. There is no set protocol for when this is done. In realizing that there are fewer leaders emerging and training in *dule igar*, they are encouraging new potential leaders to join the ranks, even if they are not versed in *Bab Igar* yet. The new leaders are helped in the process of learning through being part of the practice itself. In Ukupseni a man who has shown interest in *dule igar* and participates actively in *onmaked nega* but has not taken up formal study was invited to become an *argar*. As an *argar* a formal part of *onmaked nega* he finds himself on an accelerated course to learning the skills and knowledge required of an *argar*. A similar case is a younger man in Colebir who has been the president of the Mormon Church in the community for several years. He was seen to be a potential spiritual leader but he has no formal training through *dule igar*. He was invited to become an *argar* and has now taken up formal *dule igar* study.

The CGK and CGCK are vehicles for regional level initiatives undertaken as part of their mandate to work towards maintaining the well-being of the communities. They also perform a monitoring function through Comarca-wide information, building a more complete picture of the state of communities, their needs, and areas for potential support. It was in this light that the CGCK, through regional meetings and meetings with other Kuna collectives in Colombia and Panama (Madungandi and Wargandi), decided to take initiative in several areas to enhance leadership development. The idea of developing a process to continue the *Ibeorgun* system of leadership development began many years ago, according to the project leader. It has taken several years of consolidating ideas between leaders and working with professionals from several fields (sociology, anthropology and education, among others) and NGOs to build the project outline and proposal.

During 2008, several attempts to access funds through international agencies were underway, but the initiative had not yet received funding. It was managed through the CGCK process. The project in its initial stage was a scoping exercise to establish the quantity of potential participants in a formal *dule igar* leadership development school, as well as the potential teachers. This was to be accomplished through conducting promotional activities in communities, to motivate potential students. The main focus

of the teaching was to be on *Bab Igar*, as the CGCK has a strong focus on promoting spiritual leadership through the *dule igar* system.

The project leaders were aware of the methodological challenge they faced in reconstructing an ancient tradition in a changing world. This is where the support of Kuna education theorists and sociologists was useful, and once again, emphasises that epistemological pluralism is seen as necessary when dealing with such complex problems in a changing world. The methodologies employed traditionally in *dule igar* leadership training - an extended period of apprenticeship, often far from home, experiential education and knowledge passed down verbally, extended counselling and expectations of high moral standards in leaders - must now be adapted to the current situation. One potential adaptation of methodology that was being discussed would use a reflection methodology employed by the Catholic Church in facilitating seminars with *sailagan* and *argargan* on *Bab Igar* combining chanting with group analysis and discussion.

6.7 Conclusion

This chapter has reported on findings regarding the role of leadership in adaptive capacity of Kuna communities. My interest has been in understanding leadership that supports adaptation and self-organisation. Models of leadership from organisational learning provided a framework through which the skills of leaders supporting adaptive and learning behaviours of collectives were analysed. In particular, the CLT model (Uhl-Bien et al., 2007) proved a useful guide for distinguishing between and analysing interactions of administrative, adaptive and enabling leadership. This framework addresses one of the paradoxes of how CASs development is 'managed' – nurturing self-organisation through adaptive behaviours while not losing sight of the need for instrumental organisations to manage collective life.

Kuna communities continue to use the *onmaked* governance system which has evolved through meshing of *dule igar* and extended structures and leadership roles. While new roles and structures for them are built as new challenges are continuously faced through increased interconnectedness between communities and the globalised world, it is the age-old practices of leadership development and central dialogical governance that continue to provide adaptive capacity. It appears that self-organisation, as an organic social process through which new arrangements and adaptations emerge, can still be nurtured through use of the *Bab Igar* framework.

Leaders tend to exhibit skills of embodied and reflexive leaders which are useful for the process. Dialogical governance uses protocols that ensure open dialogue and principles such as reciprocity and respect for others, from *Bab Igar*. These are what diZerega (2000) argues are general principles for democratic self-organisation, they are "general principles of action to be followed in an indeterminate number of cases by any unforeseeable number of people pursuing an unknown variety of particular ends" (p. 172).

The key difference between an instrumental organisation (e.g. the aqueduct committee or community bank), with goal seeking structures, and a CASs (community as a whole), is that the latter does not have any specifiable goals. The goal of community is well-being, an abstract notion that cannot be used to build a particular instrumental structure. Under circumstances of continuous change and inability to specify a tangible system goal, general principles that maximize information exchange work best. Adaptive success is enhanced through having high diversity of ideas, and the focus of management turns to facilitating a process. In the case of Kuna communities, procedural rules have emerged through self-organising processes; they are embedded in the *Bab Igar*, the framework that continues to support Kuna collective life. Leadership, therefore, plays an important role in facilitating interactions using these principles. Knowledge of and practice with use of *Bab Igar* is an important aspect of adaptive leadership.

The challenge that communities such as Ukupseni face, under current conditions of heightened complexity is in continuing to build new instrumental social structures, such as new committees, necessary for managing emergent aspects of community life, and *simultaneously* continuing to foster self-organisation through dialogical governance. The key to this balancing act seems to lie in a continued use of holistic approaches, through *Bab Igar*, and leadership training. There is evidence that a decrease in *dule igar* leadership training is impacting upon this ability, however, the reflexive Kuna system has picked up on this negative feedback and is pro-actively addressing the issue.

Chapter 7

Persons as Integral Parts of Communities

The sacred and the numinous, the rational and the affective, the everyday formal structure of society and its occasional ritual or festive state of communitas, form wholes through the mobilizations of which the ambitions of separate men and women may be subordinated to common interest while at the same time the operations of society are continually reviewed and tempered by the needs of the very same men and women. Wholeness, holiness, and adaptiveness are closely related, if not, indeed, one and the same. (Rappaport, 1999, p. 437)

7.1 Introduction

This chapter presents analysis of and findings on how individual persons interact with Kuna collectives to support adaptive capacity. The reflection group identified several ways in which persons interact with the community to enhance collective action (e.g. participation in collective decision making, collective mobilisation through communal labour and engagement in ritual practice). This chapter explores the behaviours of persons as they participate in collective life and analyses practices which produce persons who support adaptive capacity.

   Understanding how persons facilitate adaptation through collective action requires seeing collective action as the outcome of multiple behaviours. One such approach is Melucci's (1989, pp. 93-111) theory of collective action, in which collective phenomena are understood as the outcome of multiple processes occurring between individuals and the collective. This constructivist approach steers away from the structure/motivation dualism, to focus on the interactional sphere of the individual within the collective. It is consistent with findings of Kuna practice echoed through the reflection group process, and a complexity view of social interactions. Taking this view, the multitude of collective phenomena that support adaptation are viewed as diverse in their foundations, and implies that the individual person must engage in a variety of behaviours for adaptive capacity.

   I first provide a description of how the social life of persons in Kuna communities involves interaction with embedded layers of the Kuna biocultural system. This sets up the context through which development of persons and their behaviours in the collective are then analysed. The second part of the chapter is concerned with

understanding how Kuna persons are able to interact within the collective through multiple behaviours. Being part of a collective and working towards collective goals is important, but bringing a unique perspective to the collective is also necessary. This seemingly contradictory nature of collective adaptive behaviours is analysed through the practices of personhood development the Kuna employ. A brief review of some approaches from psychology and theology begins to illustrate the central concern further; while individuals exhibit multiple behaviours, and are made up of multiple 'selves', they are integral persons. Different aspects of a person's 'selves' may be leveraged at different times to support particular collective behaviours, but a person is necessarily more than certain behaviours, and must be understood as a whole. Analysis of particular behaviours that are necessary for supporting collective adaptive capacity, such as acting with solidarity and exhibiting collective identity, is undertaken through this approach to persons developed as integral wholes.

Next, I look more closely at how collective identity in Ukupseni and Colebir is constructed as one aspect of personhood. Collective identity is thought to be an important motivating factor for collective mobilisation (Polletta & Jasper, 2001). Strong collective identity has already been described as a characteristic of the Kuna by other scholars (Chapin, 1991; Howe, 1998). Collective mobilisation in Kuna Yala continues to be strong today, and is thought of as an important support for adaptive capacity.

In the third section of the chapter, a different aspect of how individuals interact with the collective is analysed. It addresses one of the initial interests of this thesis in contributing to an understanding of how indigenous knowledge systems are able to facilitate deep learning for dealing with crisis. Transformation is a collective process as much as an individual process, and in order to understand how personal deep learning and transformation can facilitate collective transformation the chapter turns to analysis of Kuna ritual practice. Rituals are analysed in terms of being processes for facilitating transformation of individuals and the collective, based on the original rites of passage model developed by van Gennep (1960), and use of later extensions of this model. Both individual and collective rituals are analysed, leading to a discussion of the role of these practices in facilitating transformative change through individual interactions with collective processes.

7.2 Embedded Biocultural Spheres

Based on in-depth qualitative inquiry undertaken in Ukupseni and Colebir, this section provides the context for analysis of the interactions of individuals within the collective. It shows the collective spheres that make up the fields of daily engagement. The embedded nature of Kuna Yala, as an IBCS, is the context within which individuals are developed to support collective life and adaptive capacity.

7.2.1 Life as a collective endeavour

The Kuna are known for being highly communal (Chapin, 1991; Howe, 2001; IWGIA, 2006). The physical structure of Kuna communities reflects this; they are made up of a pattern of tightly constructed houses. Although it is true that now the island communities of Kuna Yala are becoming over crowded and there is limited space for new houses, this is not the source of the tightly woven community structures. These patterns are found also in Kuna communities on the mainland where there is sufficient space to spread yet houses are still built closely to one another.

Beyond the close proximity of physical living space and houses in the community, Kuna family structures are also tight, with households comprising several nuclear families living together and often all sleeping under the same roof, sometimes so close that their hammocks are touching. Kuna people are so used to sharing living space and tasks that they tend to be uncomfortable on their own. This was manifest to me during my time living in Kuna Yala. At times I felt a need for solitude as constantly being around large groups of people becomes overwhelming. My need for space and solitude was consistently met with concern for it was understood as a sign of being unwell.

The tight social behaviour pattern of the Kuna goes beyond the communities in Kuna Yala and is observed in Kuna living outside of their communities, in Panama City for example. City-dwelling Kuna maintain the practice of living in groups of extended family members and share space and activities. There are several Kuna neighbourhoods in Panama City. When I first arrived in Panama in September 2000, I spent several months in Kuna Nega, a Kuna community on the outskirts of the city. Most families living in Kuna Nega had been there for several decades and had long established themselves within the multi-ethnic Panamanian workforce. While I was there, the community was governed through a collective process similar to that used

in Kuna Yala. Community regulations mimicked those found in Kuna Yala, such as a total ban on the sale of alcohol within the community. Although Kuna Nega was surrounded by non-Kuna communities, the community felt like a different world, a Kuna world.

As seen through both the structure of Kuna communities in Kuna Yala and the spaces they re-create outside their communities, Kuna life is primarily a collective practice. Whether this takes place in its natural setting of a Kuna community, or in an urban community setting, within a heterogeneous cultural system, the collective nature of life is promoted through persons who continue to live collectively – Kuna collectivity is a praxis.

7.2.2 Daily practice embedded in collective life

Ukupseni and Colebir provide a stage for collective life to be played out on, and so became the medium through which I gained understanding of the interactions between persons and collectives. Life in these communities consists of moments of interaction with other persons and groups in carrying out daily activities. There is a marked division of labour between men and women and the daily practice of each group differs most of the time.

Men spend most of their days in subsistence activities. They travel to and from the mainland in dugout canoes and on foot to their agricultural land, collecting firewood or working in agriculture or hunting, or are on the sea fishing or catching other sea life. Men work on their own, in pairs or in small groups. In both Ukupseni and Colebir there are many agricultural groups that work collectively, some with 10 or 15 members, and others comprising almost the entire community, such as the Colebir community agricultural group with 130 members. Men spend a lot of their time interacting with other individuals or in groups in activities that take place in interaction with the ecosystems.

Women spend their days mainly within the communities. Their activities are centred around the household and family; looking after children, preparing meals, washing clothes, cleaning, etc.. Less frequently, they leave the house to perform community or commercial tasks such as preparing and serving refreshments for children at school or trading with Colombian merchant ships. The daily activities of women are carried out by groups of women. One will wash the clothes as another prepares a meal in the house or a group of women work together preparing food for a

community occasion. It is very unusual for women to work alone. Women's lives take place in a web of social networks including family members, neighbours and extended community members. The chores extend out of the household into the community. In order to light the fire in the morning, for example, a young girl is sent to gather burning embers from a nearby household that has a fire going.

The daily activities of men and women require that individuals spend most of their time interacting with other individuals and groups within the collective. In the evenings, when men are back from their work, the meal has been eaten, and the house tidied, it is time for the administrative, spiritual and leisurely activities to take centre stage. These are all undertaken in groups and are highly social in their structure as well as their goals. The differing community structures and layers of complexity create variations in activity programming and management in Ukupseni and Colebir:

In Colebir, social life beyond the households revolves around *onmaked nega*. Chanting sessions take place on Monday, Wednesday and Friday. Women attend morning chanting sessions and are also expected to attend evening sessions with the men. No other activities are held on these evenings. On Tuesdays and Thursdays the evening sessions in *onmaked nega* take on a meeting form, and are not obligatory, although when important matters are discussed they are attended by most of the community. These evenings may also be used for the few group activities in Colebir, such as the *gammu burwi* dance group practice, church services, and meetings of other groups such as the sports committee or parents' association.

In Ukupseni, chanting sessions are held on Tuesday and Thursday. Women attend morning sessions and, separately, men attend evening sessions. *Onmaked nega* is open daily for administrative purposes at 4:00pm and on the days there is no chanting there is often a 7:00pm meeting session. The evening sessions may be used for general assemblies, when all of the community is required to participate in important decision making. On the days when there are no formal sessions in *onmaked nega*, many social activities take place in the community. There are two cooperatives that show movies on large screens and their members are obliged to buy at least one ticket. There are numerous shops and bakeries and other small groups that hold meetings or fund raising activities. There are numerous churches that hold services on different days of the week. The *gammu burwi* groups also have dancing practice sessions during the evening hours.

The description of daily activities of men and women in Ukupseni and Colebir illustrates that life in Kuna communities is a well coordinated dance of continuous interactions within a web of social networks. The implications of the social networks and Kuna networking practice for adaptive capacity of communities will be discussed in detail in the following chapter. Here, the important point is that the social world of persons living in Kuna communities involves embedded spheres. The spheres of action start with the family and progress out to the community. In the following section, the embeddedness of the social world within the natural systems of the Kuna IBCS is discussed, illustrating the role that individual persons and the collective play in maintaining a relationship with ecosystems.

7.2.3 The social embedded in the natural

The CASs analytical framework conceptualises the bio-physical and socio-cultural spheres as linked. Conceptual development (see Chapter 5, Section 5.4) highlighted that maintaining a relationship between the social and natural systems is one of the key enabling conditions for adaptive capacity. In this section, the social spheres of Kuna life are analysed as sitting within wider ecosystem processes, illustrating the role individual interactions play in maintaining a relationship between the socio-cultural and bio-physical. Moreover, these interactions are then analysed in terms of the process required for facilitating collective monitoring.

As has already been noted, Colebir is less internally complex and has fewer interactions with the external system environment than does Ukupseni. Despite the difference, in both Colebir and Ukupseni, men continue to spend most of their time in subsistence activities, interacting directly with the ecosystems. There are some cash renumerated jobs in Ukupseni, such as construction or working at the two hotels, but subsistence still relies primarily on locally produced or caught food. There is a significant difference, however, between how individual or group interactions with the ecosystems are shared with the collective between the two communities.

In Colebir it is still common practice for the majority of men to gather in *onmaked nega* in the evenings to discuss their daily activities. Information is exchanged about the different parts of the collective territory they have been to that day and the activities they have engaged in. These discussions are either informal – e.g. a conversation between friends that takes place in the periphery of *onmaked nega* before the more formal meetings get under way - or formal group discussions. Any

177

unusual information relating to agriculture, production, or the state of ecosystems can become a formal discussion facilitating exchange of information with the collective, and reflection on what the information encodes. These conversations bring the experiential aspect of life and, in particular, interactions with ecosystems into a social setting. An ongoing conversation of collective experiences with the ecosystems works as a monitoring system, allowing the state of the natural systems to be understood. Feedback from the ecosystems is received and interpreted by the collective through this daily practice.

In Ukupseni, by contrast, daily debriefing by men on their activities is no longer common practice. Older men continue the practice, but most younger men, who make up the main workforce, are engaged in other social activities in the evenings and do not congregate in *onmaked nega*. Also, the complexity of collective life means that *onmaked nega* is usually busy with administrative matters. Conversations regarding the day's activities and experiences tend to remain as peripheral interactions between friends. While unusual experiences do make it into the *onmaked nega* conversation, there is not a continuous daily information exchange or socialisation of information which is the basis for a collective monitoring system.

In summary, individual persons play an important role in maintaining a relationship between ecosystems and the community through their daily practice. Further, the individual interactions are shared with the collective to support a monitoring process. Feedback is 'read' by individuals and the collective, so that a continuous process of receiving, analysing and interpreting feedback from the natural systems becomes part of collective processes. The implications of these processes for connecting endogenous development to sustainable development and co-evolution are significant, and will be discussed further in the conclusion to this chapter, as well as feeding into chapter 9. Now, I turn to analysis of practices and processes used to develop persons as integral parts of the community through the embedded spheres of the biocultural system, and who support adaptive capacity through their multiple behaviours.

7.3 Developing Personhood

Two main behaviours of persons were distinguished during the reflection group process and community field work as important for supporting collective action; behaving as a member of the collective through exhibiting solidarity and identifying

with the group, and behaving as a unique individual in order to leverage differences within the collective. As Melucci's (1989) model of collective action illustrates, the multiple forms of action require multiple behaviours. In chapter 6, the task of adaptive leadership was shown to involve facilitation of interactions so that both solidarity and conflict are leveraged for adaptive capacity. The CASs framework highlights that individuals who are integral parts of the whole community foster self-organisation through their engagement in community processes. Personal community engagement requires collective identity and social networks for interactions. Conversely, emergence is the product of leveraging the difference between the parts. For this, participating individuals must bring their unique qualities to the collective.

A superficial understanding of collectivist or individualist societies makes it difficult to accommodate seemingly individualistic *and* collectivist behaviours within persons of a certain culture. An often cited approach to the distinction between collectivist and individualist societies is that developed by Triandis (1995). In his model, individualism and collectivism are called cultural syndromes, defined as "Shared patterns of elements of subjective culture" (Triandis & Trafimow, 2001, p. 260). In other words, people from some cultures tend to exhibit more collectivist behaviours while from others they exhibit more individualistic behaviours. While in this model there is some recognition that personalities influence the level of individualism or collectivism of any one person within a culture, the overall model is problematic because it promotes a dualistic view of collectivism vs. individualism.

Several scholars argue that the dualistic view is the result of a distinction between collectivism and individualism coming out of the 18th century European approach to atomism, which argues that individuals are independent, and self-sufficient parts of society (Clippinger, 2007; Edge, 1998). The implicit assumption, therefore, in the collectivist/individualist dichotomy of cultures is that in collectivist cultures there is limited individual autonomy. Traditional societies have been interpreted as collectivist and modern societies as individualist, creating an erroneous understanding of the interactions between individuals and collectives in different societies (Allik & Realo, 2004). From this approach, the highly communal nature of Kuna political and social organisation suggests that Kuna society is collectivist, and within it, individuals lack autonomy and exhibit collectivist behaviours. This is misleading, and problematic to understanding how adaptation is facilitated through the behaviours of individual

persons. As has been highlighted already, understanding the dynamics of CASs requires understanding just such apparent paradoxes.

Through analysis of how Kuna persons interact with Kuna collectives to support adaptive capacity I provide an example of how individual autonomy and collectivism are both integral aspects of persons; thus, Kuna society is a collectivist society that is the sum of autonomous individuals who have developed autonomy through cultural practice. Before undertaking analysis of how Kuna persons are developed to support adaptive capacity and collective life, I first provide a brief view of personhood from psychological and theological approaches which provide a framework for viewing persons as made up of multiple 'selves'.

7.3.1 Persons made up of multiple and integrated 'selves'

Psychology has long been interested in notions of the 'self' and the 'person'. Undertaking a review of the use of the two concepts in the extremely diverse field of psychology would require space that I cannot afford here. I therefore merely touch upon a few approaches that are of interest to my goal in this chapter, and help build a theoretical understanding of whole persons exhibiting multiple behaviours. One such approach begins from the premise that identity is an effective guiding concept for understanding construction of 'selfhood'. Identity is understood as "a set of meaningful definitions that are ascribed or attached to the self, including social roles, reputation, a structure of values and priorities, and conception of one's potentiality" (Baumeister & Muraven, 1996, p. 406). Construction of 'selfhood' may therefore be analysed in terms of construction of identity.

Interactionist psychological approaches have produced multipart models of self identity; the combination of the 'self' as an individual as well as the 'self' as part of a social interaction with a group. An example is the tripartite model of individual, relational and collective 'selves' (Sedikides & Brewer, 2001), in which three aspects make up the identity of a person; the 'self' as an individual, the 'self' as related to others and the 'self' as a member of a collective. The suggestion of such models is that all people are integrated 'selves' that exist in different cultural settings. Developmental social psychological models of identity and 'selfhood' further illustrate that identity develops through interacting in a particular social context (Baumeister & Muraven, 1996). The socio-cultural context is therefore an important influencing factor in construction of self identity. From this viewpoint, people

developing in different cultures may exhibit some aspects of their self more than others, but they all still have multiple 'selves'.

Moving from a psychology of 'selfhood' to a psychology of 'personhood' is useful as it begins to address the central concern here which is how multiple aspects of 'selfhood' or multiple 'selves' become an integral whole – a person. Harré (1998) suggests that the 'self' is in fact not an entity in its own right, but rather, it is a useful concept through which we can inquire into different aspects of a person. His 'standard model' which is a conceptual tool for understanding personhood, contains four main concepts:

> 'Person' (the unique being I am to myself and others); 'Self 1', the centre or 'origin' of relational properties that make up my field of perception and action; 'Self 2', the totality of attributes both ephemeral and enduring of the person I am, including my self-concept, the beliefs I have about the characteristics I believe I have as a person including my life history; 'Self 3', the personal characteristics I display to others. (Harré, 1998, p. 148)

Harré's Self 1, Self 2, and Self 3 together produce what he terms a 'person'. The three selves are concerned with how a person understands and portrays themselves, but they are always integrated within the person. Harré (1998, pp. 156-158) further develops this model, and argues that Self 1 is central to the embodied person, a person can only have one Self 1. A person may, however, have multiple versions of Self 2 and Self 3, so that personhood is the sum of multiplicity of 'selves'. What this analysis brings to an understanding of my central concern in this chapter is that persons are always unique individuals, but through holding multiple versions of Self 2, a person can have multiple beliefs about oneself, and can therefore exhibit different Self 3s, through different behaviours. Multiple beliefs and behaviours do not contradict themselves but rather combine to form the whole. This approach to personhood allows both a multiplicity of 'selves' to be viewed, and an integral whole person. What I am interested in understanding in the analysis of Kuna personhood is what practices are used by the Kuna (explicitly or implicitly) to produce whole persons who may use aspects of their multiple selves.

Theology is another field that has been directly preoccupied with the notion of personhood. Within Orthodox Christian theology personhood has been a central focus. In this tradition, the meaning of person is derived from its Greek form (πρόσωπον) which literally means face or to be facing someone (Yannaras, 2007). Personhood is therefore defined as ontologically relational. This view of persons as

relational beings is consistent with social psychological views of the self as relational but, here, it includes an ontological dimension through the relationship of the person with the divine. A view of persons as relational, however, does not negate the existence of individual freedom, expressed through self-consciousness (FitzGerald, 2006). Individual freedom produces uniqueness in individual persons, creating difference or 'otherness' (Zizioulas, 2006). Communion requires acceptance of difference in order to have unity. In other words, community emerges through the sum of different, unique individuals. Thus we find in Orthodox Christian theology an approach to understanding uniqueness and individuality as fundamental aspects of community.

Using Western psychological models of individual persons can be problematic in cross cultural analysis (Markus & Kitayama, 1991), as can be the use of Western theological models. Ethnopsychological studies have illustrated that different cultures hold different views of the 'self' requiring an entirely different approach (Riesman, 1990). The models that I have briefly mentioned, however, are integrative and flexible so as to permit analysis of personhood from multiple perspectives. The participatory approach used during the field work, allowed guidance to come from the research process itself. The psychological models, and reference to a theological approach have been included here to illustrate that understanding a person as the sum of multiple parts, and therefore viewing his/her role within community as emerging from its multiplicity is an endeavour already engaged in by scholars of various fields. For this analysis of adaptive capacity, these models are helpful metaphors that enable appreciation of the paradoxical nature that is central to a CASs view of social system dynamics.

In the proceeding analysis of Kuna personhood development, I will look at two aspects of personhood that are of particular interest for adaptive capacity; construction of collective identity that can support collective actions, and development of uniqueness in individuals to support adaptive capacity.

7.3.2 Embedded collective identity

Burbaker and Cooper (2000) argue that there are some general themes in the way the ambiguous concept of collective identity has been used: (i) as the ground for social and political action; (ii) to emphasize sameness between those engaged in collective phenomena; (iii) as a core aspect of selfhood; (iv) as a contingent product of social

182

action that is the basis for further action; and, (v) as the product of multiple and competing discourses. As this typology indicates and others argue, the concept of collective identity has been used at times too broadly and at others too narrowly (Polletta & Jasper, 2001).

The interest of understanding collective identity here is not purely from a psychological perspective of how the self is formed or from a sociological perspective of interactions between structure and agency, but rather as one of many factors that encourage collective action. Thus, while there are aspects of the different uses of the concept of collective identity that are relevant to this analysis, a focus that leans more towards collective identity as a motivating factor for social action is used. There is a general need for detailed analyses into the dimensions of collective identity that motivate people (Snow, 2001), but my goal here is only to understand how collective identity, as one aspect of the self which motivates certain behaviours, is built. The interactional framework of Kuna social reality ensures that collective identity is not viewed as the sole motivational factor, as it is a contingent process. As Cerulo (1997) points out, there has been a move in the last 30 years towards using a more constructivist approach to collective identity. This approach has also been used when inquiring into the construction of ethnic indigenous identities (Kvernmo & Heyerdahl, 1996). Collective identity here is understood as being socially constructed through spheres of social interaction and motivation for supporting collective action.

Identity is both a category of practice and a category of analysis (Brubaker & Cooper, 2000). My focus for understanding how people construct collective identity in communities was based on the phenomenology of a practical identity. Using this approach does not deny the use of collective identity as an analytical category by the Kuna in their political struggles for self-determination. There is, however, a methodological implication to which aspect of collective identity one is inquiring into. In conducting the field work in Ukupseni and Colebir, I found that collective identity is not something that people are aware of, but rather it is unconsciously part of their being in the world, part of their practice. When discussing collective identity with leaders of the CGK and other Kuna organisations outside the Comarca, the concept became an analytical tool that is useful for understanding Kuna collective phenomena. This coincides with the findings of studies focused on ethnic identity, which point to its meaning in terms of interethnic contact (Christian, Gadfield, Giles, & Taylor, 1976). Those using Kuna collective identity to reflect upon the difference between the

Kuna and others are using it as an analytical tool, rather than an experiential aspect of themselves.

My primary interest was to understand the experience of how collective identity is constructed by individuals living in Ukupseni and Colebir. I found that talking with people about moments or experiences that make one feel a part of the collective was a useful tool for reflecting on the experience of collective identity rather than the idea of identity. Findings from these conversations are presented.

Source of collective identity

Collective identity of Kuna men is directly related to their daily practice in subsistence activities such as agriculture and fishing. They view these practices as their duty, and through fulfilling it they identify with the collective. There is a sense of pride when they speak of their ability and desire to fulfil their duty as Kuna men. Part of the personal pride comes from supporting their family through their work, in providing food and shelter to ensure their family's well-being. The pride they feel is also reinforced by the collective, as their efforts are recognised and valued by the collective. It is common to hear people speak about men in the community in relation to how hard they work, and those who fully provide for their families through agriculture, hunting and fishing are respected and looked up to. Thus providing for one's family through engaging in collective daily practice is valued by the collective. This reinforces the relationship between practice and identity of the individual as part of the family and the collective.

In Ukupseni today there are some jobs that provide cash income (such as working at the hotels) and, although men who have a cash income are considered successful, their efforts are less valued than are those of men who provide through traditional practices. Kuna collective identity is related to the way they have lived for generations, through working directly with the land and the sea. One man in Ukupseni said: *When I am in the fields working with other people for the community, then I feel a part of it. I don't feel like a member* [of the community] *unless my hands are dirty and my back is aching.* (Filed Notes, Ukupseni, June 2008). This is also related to the spiritual connections that one has with *Nan Dummad* through engaging with the ecosystems. Having a cash income is seen as useful in today's setting, but it does not provide the same level of pride that is conducive to developing collective identity.

There is no doubt, however, that an increasing dependency on a cash economy and migration out of Kuna Yala are impacting upon Kuna identity.

In addition to fulfilling their duty to provide for their families, the hard work of men directly supports the overall well-being of the collective through providing resources for collective activities such as rituals. Just as there is pride in providing for one's immediate family, there is also a sense of pride in providing for one's extended family – the community. Producing high quantities of quality agricultural produce is a source of community pride. The CGK agricultural commission measures the quantity and quality of agricultural production in all Kuna communities. Their findings are presented to the general assembly once a year. The results become a source of pride or shame for communities. It is common to hear conversations between people about how much or how little a certain community produces. In Ukupseni, a community with comparatively low agricultural yields, there is often a feeling of shame. Thus the practice of individual men in communities directly feeds into the overall productivity of a community and its identity and pride. In this sense, the individual who fulfils his duty enhances both his own standing in the community as well as the community's overall standing.

Similarly, women express a sense of pride in fulfilling their daily activities such as keeping their household tidy and looking after the children and the family. This is primarily because they are providing for the well-being of their families, but they also recognise that it extends beyond their family and into the community. If every household is kept tidy then the community is tidy, and like the ability to produce food, a clean well kept community is a source of collective pride. Being hospitable to visitors is another example of the expression of the pride a household feels in its ability to provide for others. A woman in Colebir said: *I feel happy when I am cooking for our guests. When we do things all together, then we are dule, then we are how we are supposed to be.* (Field Notes, Colebir, May 2008). This woman directly relates the notion of being Kuna (having collective identity) to that of working collectively, emphasizing how individuals are integral 'parts' of the 'whole'.

The strong sense of pride that men and women feel in fulfilling their activities as part of a family and a community within Kuna Yala is a source of collective identity. Men and women in Ukupseni and Colebir experience their collective identity as constructed through practice within a field of embedded collective layers from the individual to the natural systems, in the embedded IBCS. Kuna collective identity of

individuals living in Kuna Yala is a relational identity of the individual within the collective, within the natural systems, and is based on and reinforced through collective practices.

7.3.3 Individuality and personhood

Individual behaviours for supporting adaptive capacity include individuality expressed through participation in collective processes. The Kuna process that produces integrated persons within communities is now analysed in terms of its ability to produce individuality and uniqueness. In chapter 6 the holistic *dule igar* system used in training and cultivating people to become leaders with appropriate knowledge, skills and behaviours was discussed. A similar holistic method is employed in the development of personhood in individuals who are part of a family and a community, albeit in a less formal and less explicit manner. Some general aspects of the process are discussed.

Experiencing the embedded spheres

The social experience of a person in Kuna Yala starts from before birth, as one leader put it: *A Kuna person interacts with the social world from the womb* (Field notes, June 2008). The gestating mother bathes in medicine that begins the development of the child as a social being. The immediate care for infants is the responsibility of the mother and women in the household. But, as the child grows, so does its social experience. The child becomes a part of the social spheres from an early age. Due to highly communal social organisation children are always surrounded by, and part of, the collective. Children, in fact, are often the centre of attention and the centre of life. The adult world and the child world of Kuna communities are one and the same. Integration into community life allows the child to grow through experiencing social spheres that make up the collective.

From an early age, boys and girls begin engaging in the daily activities of men and women. They begin by assisting their parents in their daily activities. The boys are taken out to work with their fathers when they are performing lighter tasks at about twelve years old and progressively grow into more strenuous tasks. In Colebir, boys become full members of the community at fifteen if they are not in school. At this age they are expected to perform all of the tasks that men do, with the exception of the more strenuous tasks such as felling trees in old forest. Girls assist their mothers in

looking after younger siblings, preparing meals, washing clothes, etc. as soon as they are able to. The focus is not on gaining knowledge but rather on learning life skills, which facilitate personal development through engagement with the collective. A child learns to become an adult by practicing being an adult.

Diversity of role models

Teachers of leaders in the *dule igar* system are chosen not only for their skills, knowledge and proven success, but also for their virtuous behaviour. These great leaders are role models for the leaders in training. Likewise, parents and adults who are cultivating children and young adults are role models. Adults are thought to be successful members of the collective when they fulfil their role as an individual member of the community. This individual interaction involves both being unique and being a collective agent. One's individual actions in agricultural production, for example, are rewarded, while their actions as collective members, through clearing trails, for example, are also rewarded.

   Children interact directly with adults in their household; their parents, grandparents and other extended family members, as well as interacting with other adults in the community. The responsibility of child care and development is shared between adults in the household. In effect, a team of adults work towards the development of any individual youth. The core family team is supported by community leaders such as *sailagan* and *argargan* who play a direct role in the development of youth through collective processes. The sharing of responsibilities and roles among the embedded levels of collective life builds resilience in the system. Role models include a diversity of unique individuals who participate with the collective both in their own unique way, and in the same way.

Counselling

Kuna leaders in training through the *dule igar* system initially go through extended periods of counselling from their teacher. The advice they receive is about how one should behave as a leader in the collective, and works towards cultivating the person as a leader. Behaving as a leader is about embodying the position; being a person who exhibits virtuous behaviour and focuses their actions for the good of the collective. As I noted in chapter 6, Kuna leaders are not perfect in their behaviour, and while they are held to the highest standards and their behaviour is scrutinised by the public,

they are also awarded considerable leniency when they misbehave. Leaders, therefore, are expected to exhibit virtuous behaviour towards others and all individuals are encouraged to do the same.

Counselling is used generally in the development of children. Encrypted in the values with which they are counselled on is the behaviour of the individual as a member of the collective; both as a unique individual and as a member of the collective. The family and household are the seed bed where the seed of collective being and action is first planted in the child. The adults of the household are the counsellors of the young. Advice is not administered in a formal manner but rather is woven into the child-adult relationship that supports growth and development overall. It is not limited to a child-parent relationship, but rather children are the youngsters of all adults in the family. It is common in Colebir to find grandmothers by the fire in the early morning counselling their grandchildren. Much like the counselling of the teachers, the household counselling is constant, repetitious and prolonged throughout the child's development.

Personhood and spirituality

Development of personhood has been discussed as occurring through living and interacting in the embedded collective, and facilitated through role models and counselling of adults and leaders. Practical experience is the main vehicle for producing both collective and individual identity. As with leadership development, it includes theoretical grounding from the *Bab Igar*. *Bab Igar* has been described as a dynamic system of developing and reinterpreting stories that make up the Kuna worldview and collective memory (see Chapter 3). It is the source of philosophy, meaning and spiritual dimension for the Kuna collective and individuals. In Chapter 6, the *Bab Igar* was shown to provide principles for facilitating dialogue within collective processes to support holistic governance. Similarly, in personhood development, *Bab Igar* lends a hand through providing principles and cultivating spirituality as a fundamental aspect of personhood.

The Kuna refer to themselves as spiritual people. I spoke with elders, leaders, ritual specialists, and lay people about what being spiritual means to them personally and to the Kuna collectively. I was interested in understanding how they view their spirituality, and how personhood is understood through it. In conversations about spirituality and the *Bab Igar* as a framework for interpretation, surprisingly, beliefs

were never mentioned. They continually referred to their practice as evidence of Kuna spirituality. This is not to say that the *Bab Igar* is not a promoter of spirituality, or that the Kuna do not hold beliefs that are understood through the stories of the *Bab Igar*. It is an indication, rather, that the daily lives of people are spiritual not because they believe in a theory (an abstract notion) but rather because of what they do. Providing a guest with something to drink is an act of spirituality, going to work every day and engaging with nature is to act spiritually, fishing is a spiritual act.

Through an experiential view of spirituality, the *Bab Igar* and its teachings come alive in individuals through the practices that are developing personhood. This does not mean that the values and principles of individual behaviour in the collective that are theorised in the *Bab Igar* are not guiding the development of personhood, but rather that the theory becomes meaningful and useful through its connection to the practice. The guidance of *Bab Igar* comes through it being an implicit part of how adults teach children. The practices described above - experiencing daily practice, being a role model and counselling - are all conducted with the guidance of *Bab Igar*, while it is not explicitly taught. The same daily practices that affirm individuality also develop collective identity and opportunity for spiritual expression. The result is a holistic process in which the individual self is integrated with the collective self to produce a whole unique person. These practices are compatible with Harré's (1998) psychology of personhood and theological interpretations (FitzGerald, 2006) of a person as the whole of relational and individual aspects.

There are, however, moments when the *Bab Igar* is explicitly used as a framework for facilitating reflection on collective and individual behaviours. These are the chanting sessions in *onmaked nega*, in which the *sailagan* share the stories of the *Bab Igar* with the community. The role of the *argar* is to connect the underlying message of the story that was chanted to contemporary issues[16]. Box 7.1 provides an example from my field work. *Argargan* often use metaphor to connect a mytho-historical narrative to current practice, emphasizing the integration of the physical and spiritual worlds. When the interpretation is skilfully accomplished it is an effective vehicle for connecting the practice of the audience with the philosophy of *Bab Igar*, making it relevant, and providing meaning to one's actions as a member of the collective.

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[16] For transcriptions of a range of chanting and interpreting performances by *sailagan* and *argargan* see Howe (1986) and Sherzer (2001).

The *sailagan* chanted the story of the great *nelegan*. The *argar* started his performance first through recognition of where he was standing, in Ibeorgun's house, a spiritual building. Next, he acknowledged the role of the audience as participants in a collective process of calling to Father. He continued with an interpretation of the chant, providing a brief overview of the story but focusing mainly on the message; in spite of their great knowledge, the *nelegan* succumbed to rivalry, manipulating the public for their own egocentric goals. Next, the *argar* related the story to fighting and envy between people in the collective, emphasizing that working together means that each person brings their own skills to the collective. Envy, he continued, is the product of wanting to be like others, but this, he insisted, was not the best way to support the collective. Finally, the *argar* reminded the collective of a great flood that occurred in 1872, and warned the collective that bad things can happen if they do not strive to work together.

Kuna spirituality is experiential, and is based on a daily practice of engaging with the collective. The teaching of the *Bab Igar* is implicitly part of the guidance offered the child through the actions and teachings of adults, and explicitly used during collective events to reinforce the practical experiences.

7.3.4 Challenges for holistic personhood

Analysis of Kuna personhood development practices illustrate that a holistic process, based on experiential learning and guidance by elders, builds integrated persons with multiple 'selves'. Multiple selves are used to motivate and produce different types of behaviour that support adaptive capacity from within the whole person. Collective identity illustrates that Kuna personhood is fundamentally relational. Cosmology, understood through *Bab Igar,* provides a theoretical framework for reciprocity through viewing the world as interconnected, with all beings having *burba* (see Section 6.4 of chapter 6 for analysis of *burba*). Through a relational personhood, therefore, people engage in reciprocal relations within an interconnected world. Reciprocity, however, does not mean that individuals are all the same, but rather that through their uniqueness they are able to support the collective. This is reinforced

through participation in collective processes through bringing unique knowledge and skills.

The picture that emerges is similar to what Edge (1998) has argued is true of Australian Aboriginal society. He calls such societies 'holistic', indicating that they promote individuality more than individualist societies by being anti-atomistic and by promoting relational people as unique members of the group. In Kuna Yala, this is accomplished through a holistic personhood development process, so that persons are both unique and members of the collective. It is, however, important to note that the practices described are undergoing significant changes in Kuna communities.

Before western education practices entered Kuna Yala formally in 1928 (Wagua, 2005) children were educated by family members and the community, as they progressively experienced life outside of the household. Today, most young children in Kuna Yala attend elementary school (7427 in total for Kuna Yala in 2005) (EBI, 2007, p. 9). In April 2010 in Ukupseni a survey performed to identify children not enrolled in school, conducted for a project on child labour, reported that 54 primary aged children are not in school (12% of primary school aged children) and 31 secondary school aged children are not in school (also 12% of secondary school aged children) (personal communication, ILO project coordinator). Attrition rates for primary schools across the Comarca are high (11.64% of primary school children in 2005) (EBI, 2007, p. 11), indicating that formal schooling is failing Kuna children.

Through the CGK and CGCK forums for debate and discussion, an initiative to improve the current education system was born. The project became a reality when funding was leveraged from the Spanish Aid Agency (AECI) as part of their long term commitment to support the Comarca. The project aims are based on an analysis of the failure of education in primary education, pointing to several causes: (i) the curriculum is taught in Spanish, as if it were the first language of students; (ii) the classroom methodology is not conducive to a dialogue between Kuna culture and the subject matter and parents cannot participate effectively; and, (iii) the curriculum is based on subjects that are irrelevant to the life of the children. The project aims to improve the current education system in primary schools in the Comarca through the development of an appropriate intercultural and bilingual education curriculum (EBI, 2007, p. 5). A combination of research into bilingual education programmes and research into traditional Kuna community education has been used to propose a new curriculum for primary schools. The new curriculum promotes the use of experiential

education methodologies, based on contextualised material that allows an intercultural dialogue between Kuna culture and others. While results of initial efforts of the project are showing a more positive educational experience both for the children and their parents, the CGK leaders involved recognise that the project can only address one aspect of the current challenges they face in the field of personhood development. Perhaps even more important than the work the project is doing with education curricula is the need to work directly with parents and community leaders to strengthen community involvement in childhood development and education.

Beyond the challenges faced by communities, a question that remains to be answered is how do Kuna living and growing up outside their communities build personhood? If the socio-cultural context is important in personhood development, in this case embedded spheres of collectivity and experiential upbringing, then it would seem that development of persons in a different socio-cultural setting would produce significant differences in personhood and could potentially impact on their ability to use multiple behaviours in supporting adaptive capacity. In this research I did not inquire specifically into personhood development in individuals living outside the Comarca, but, through interacting with many city-dwelling Kuna over my years of involvement, and touching upon the topic in the reflection group process, I can offer some suggestions.

In my experience, a considerable number of Kuna growing up outside their communities identify strongly with being Kuna. They exhibit relational aspects of personhood similar to those found in persons living in communities. Collective identity is constructed through Kuna social spheres, such as the family and extended community networks, which are re-created outside of Kuna communities. But having collective identity does not necessarily translate directly into participation in collective processes, partly because living outside of Kuna communities makes participation a more complex and difficult endeavour. And as has been shown, praxis is a vital aspect of individuals supporting communities.

Participating in Kuna collective life outside of communities can be visualised through participation in cultural or community groups, or becoming a *sikwi* for one's community. People who have recently moved to the city from the communities are generally involved in these activities. But for those raised in the city, participation seems to require an external stimulus. For example, a young woman who grew up in the city shared her experience with me; her first trip to Kuna Yala as an adult was to a

family member's funeral. She was moved by the experience, as she was immersed in ritual practice. As a result, she connected to her culture in a way that has motivated and helped her participate in multiple collective activities, such as the Kuna student association at the University of Panama.

The suggestion of this and other similar examples is that persons growing up outside the Comarca require reflection on their relational collective identity, to become motivated to participate in the collective. This is consistent with findings of a study of how young Maori growing up outside of their communities construct their cultural identity (Apgar & Horn, 2008). Collective identity in city-dwelling Kuna seems to be closer to a category of identity as analysis (Brubaker & Cooper, 2000), and becomes a category of practice through experiences that touch the person at a deep personal level. What this suggests is that the complex task of building Kuna relational identity and personhood outside of the embedded biocultural system and community practice requires a process of reflection and stimulation. This point is returned to in chapter 10 in reflection of the findings for Kuna practice.

7.4 Facilitating Transformative Change

I now turn to a different aspect of individual – collective behaviour, related to the ability of persons to engage in deep learning and reflection which are necessary for facilitating transformative changes in the face of crisis. For this analysis I will focus on the role of individual and collective rituals.

The Kuna engage in various forms of individual and collective ritual practice. The symbolic aspect of the Kuna world was the focus of much earlier ethnographic analysis. Most of this work was based on transcripts of chants of stories of the *Bab Igar* and healing chants (Howe, 2009), leading to confusion. The most vivid example of misinterpretation by ethnographers is illustrated by Chapin's (1983, pp. 425-426) correction of Levi Strauss's (1967) interpretation of the curing chant *muu igar* used during child birth. Through first hand experiential analysis of *muu igar*, Chapin illustrates that previous interpretation of second hand transcripts that argue it is merely a biological metaphor is incorrect, and for the Kuna, the chant exists in the world of the spirit. Chapin's (1983) doctoral thesis provides a thorough analysis of curing rituals and practices, based on his extensive practical field work. Other examples of analysis of Kuna ritual include studies into ritual language and its relationship to Kuna culture and society (Sherzer, 1990, 2001), and the intersection of

politics and ritual (Howe, 1974, 2002, pp. 31-78). In this section I offer an analysis of some Kuna rituals in terms of their facilitation of individual and collective reflection and learning. For this, I focus on the more public rituals which are the most celebrated and anticipated; the coming of age ritual for young women, which I analyse as rites of passage.

7.4.1 Rites of passage

The seminal work of van Gennep (1960) on rites of passage interprets the process through use of a metaphor of a territorial passage for the crossing of magico-religious frontiers. It identifies three stages of the passage of the person from one state into another. The first is the rite of separation from a previous world (preliminal rites). The second involves a transition stage (liminal rites), in which the individual does not belong to either world. Finally, the third stage includes ceremonies that incorporate the person into the new world (post liminal rites). From this basic framework, more complex models have been developed, attempting to provide a moving picture rather than a few 'snaps shots' of what is a highly complex and multidimensional process. The ritual process paradigm of Dunhan, Kidwell and Wilson (1986) is particularly insightful. It views rites of passage as "a microcosm of the society/person process. It is a cameo of the environmental process, the developmental process, and the way they interact at the time of passage." (p. 144). With such a holistic view it is no wonder their paradigm has extended van Gennep's three stages to include a total of fourteen steps in four stages, shown in Table 6.

Stages 1 and 4, preparation and reincorporation, are mainly concerned with the 'before' and 'after' phases of the rituals that mark the rite of passage. The middle stages are the most interesting for the current analysis of how the rite of passage produces individuals who are able and willing to engage in deep reflection and learning. In recognising that no model will perfectly fit onto a ritual process nor will it be able to describe precisely each step of the process, the identifiable steps to the Kuna coming of age ritual of young girls will first be described, and then related to aspects of the ritual process paradigm that are useful to the analysis.

Table 6 Stages and steps of the ritual process paradigm (RPP)

(Adapted from Dunham et al., 1986, p. 146)

Stage	Step	Explanation
1 Preparation	Old support group	Extended group who have overseen development
	Old identity	Old self from which the rite will separate
	Old identity completion	Signs of readiness that are cues for the rite
2 Separation	New environmental demands	Social cues that push the person out of the old identity. May be negative towards the old identity or context that encourages them to separate from the old identity
	Liminality	Uncertain status of the person producing cognitive dissonance
	Activation	Mobilization of the person's adaptive capacity – experienced as anxiety or fear
	Agony	Experience of crisis about the self, isolation
3 Transition	Numinosity	Awe, openness to one's fate, one is ready to be guided
	Accommodation	Signal of the beginning of the incorporation of the new role
	Ecstasy	Relief of anxiety and fear and feeling of joy
4 Reincorporation	Transcendence	Perception of entrance into new identity. It is experienced as sacred. Validates the power of the community
	New identity	Process for learning about the new identity that has been entered
	New support group	Extended community group that is appropriate for guidance in new roles
	Identity reinforcement	Both personal and social cues that reinforce the mastering of the new identity

7.4.2 Coming of age ritual process

<u>Yaagwa Sergusa</u>

The process of facilitated transition of girls into womanhood in Ukupseni and Colebir is made up of several events; the *yaagwa sergusa,* the *inna mutiki,* and the *inna suit*. The *yaagwa sergusa* initiates the process, marked by the first menstrual period. During the *yaagwa sergusa*, the young girl stays in the *surba* – a small room built inside a larger house – for four days, and is bathed by older women (see photos 7.1 - 7.2). In some communities the girl is bathed in salt water, and some argue that this began when they moved to the coast/islands. During the four days of the ritual

women collectively cook a broth made of spicy peppers (see Photo 7.5). As was discussed in chapter 6, the *surba* is a practice that is used widely in therapeutic processes, and functions both to isolate the person from the rest of the community and allow the person to focus internally. In the case of the *yaagwa sergusa*, the young girl is not in complete isolation, but only interacts with women.

Photo 7.2 Completed *surba* inside a house

Photo 7.1 Building a *surba* for the *yaagwa sergusa*

Complementary rituals also take place during the *yaagwa sergusa*. On the final day, the *sabdur guanet* and his assistant(s) perform the ritual bearing the same name (see photos 7.3 – 7.4). They begin their trip to the forest to collect the *sabdur* fruit (a plant with a black fruit with medicinal properties), from the house of the family. Tobacco smoke is blown over the specialist by his assistant before they start their dance that leads them to the canoes and out to the forest. They return with the *sabdur* fruit and again perform a dance back to the house. The women of the family prepare and offer them a plate of food and the *sabdur* fruit are then given to the ritual specialists who will be participating in the next stages of the process, the *inna* ceremonies. The young girls are dyed with the black dye of the *sabdur* fruit after the *yaagwa sergusa* ritual is over. Another complementary ritual is the collection of a male and female land crab by female ritual specialists. The crabs are placed in a bucket with the lid on during the four days of the ritual. If both the crabs are alive at the end of the ritual this signifies that the young girl will have a long and happy marriage. If, however,

either the male or female crab have died this symbolises that the young girl is likely to have a troubled marriage, and possibly will face early death of her partner or herself.

Photo 7.3 Preparing for collecting *sabdur* by blowing tobacco on the *sabdur guanet*

Photo 7.4 Dancing with family upon return from collecting *sabdur*

Photo 7.5 Women making spicy pepper soup during the *yaagwa sergusa*

Inna

After the *yaagwa sergusa*, the family prepares for the *inna* ceremony (see photos 7.6 – 7.11). The *inna* is a collective celebration involving the preparation and collective consumption of the fermented *inna* drink and it takes place months after the *yaagwa*

sergusa ritual. In part this is due to the need to collect an adequate quantity of the main ingredients for its preparation as well as collecting enough food to feed the entire community before the ritual. The *inna* rituals are well known outside the Comarca, as they take on a festive air such as that of carnival. Now, there is often an *inna* ceremony held during the Panamanian carnival holidays that often coincide with the revolution festivities in Kuna Yala. The names and duration of *inna* ceremonies vary between communities in Kuna Yala. In Ukupseni and Colebir, the *inna mutiki* is a one day event, and the *inna suit* is a longer event (usually four days) and they are both performed as part of the rite of passage. According to the *gandur* in Ukupseni and Colebir, both the *inna mutiki* and the *inna suit* must be performed for the entire process to have the desired effect on the young girls. An account based on ethnography in the village of Sasardi Mulatupu indicates that the performance of one or the other was considered sufficient (Sherzer, 2001, pp. 139-153), while one from Niadupu, which is in the same area as Ukupseni and Colebir shows similarity to the traditions of Ukupseni and Colebir (Howe, 1974, pp. 438-439). Today, however, few *inna suit* are practiced in Kuna Yala overall.

Photo 7.6 *Inna saila* sealing urns with *inna* in preparation

Photo 7.7 *Gandur* and helpers await commencement in *inna nega*

Photo 7.8 Women drinking *inna* out of gourds

Photo 7.9 *Iet* and helpers await commencement in *inna nega*

Photo 7.10 *Gandur* performing in *inna nega*

Photo 7.11 *Iet* preparing to cut the young girls hair

During the *inna*, the community files into *inna nega*, a large building that some times is a converted *onmaked nega*. Strict protocols facilitate the ritual; women and men sit in separate areas of *inna nega*, separated by the ritual specialists, the *gandur* and his helpers. The female specialist, the *iet*, sits in the women's section with her assistants. The *inna saila* is responsible for passing out the *inna* to the appropriate group when it is their turn to drink. The drinking begins with large full gourds served to the ritual specialists and then the hosts of the *inna*. A group of men and women are the servers and they collect the drink in gourds from the opened urns and perform a dance as they approach the drinkers, and vice versa. As the event progresses, people become increasingly intoxicated by the *inna* and many of the main designated drinkers are assisted by relatives or friends. Much dancing, laughing, joking, crying and wailing occurs during the event. The *gandur* officiates the ceremony and chants several times during the ritual.

The young girl is absent for most of the *inna* ritual. She is brought in and offers a small cup of water and *inna* to the guests as she stands behind a sheet with her head covered. Towards the end of the ritual, the *iet* coordinates the ceremonial cutting of the young girl's hair. This occurs outside of the *inna nega* in a designated area in the presence of only women, all of whom are highly intoxicated at this stage. The final chanting of the *gandur igar* in *inna nega* facilitates the transition process that is the central goal of the ritual. The chant for different types of *inna* differs, it is accompanied by musical instruments, and requires at some stage of the process the *gandur* to be lying in a hammock and swung high by his assistants. This has been known to result in accidents when the *gandur* is too intoxicated.

7.4.3 Analysis as a rite of passage

The RPP model of Dunham et al. (1986) (shown in Table 6) is the framework that I use to analyse the Kuna coming of age rituals in terms of their facilitation of a rite of passage. This model, however, cannot be directly mapped onto the Kuna rituals, rather, through analysis of the experience of the ritual by the initiates and the ritual specialists, aspects of different steps of the RPP are used to build a picture of the process through which the individual is facilitated.

During field work in Ukupseni and Colebir between January and August 2008, several *yaagwa sergusa* and *inna* ceremonies for young girls were conducted. During

the different stages of the ritual I engaged in conversation with both the families of the young girls and the ritual specialists. As the rituals are sacred I always asked for permission from the ritual specialist and participants to photograph and record my observations and conversations. I have participated in many such rituals over the years of my engagement with Kuna Yala but this was a time when it was necessary to make as clear as possible my role as a researcher while participating. Due to their sacred nature, even when permission is granted, it is difficult to speak directly about the meaning held by the different aspects of the rituals. All of the results were triangulated through conversations with a number of community members and specialists to verify my interpretations. My interpretations are the combination of my own observations, conversations, informal interviews and use of theoretical models of rites of passage I have already described.

Experience of the initiate

I spoke with an eleven year old girl in Colebir who was going through the *yaagwa sergusa* and with a twelve and a thirteen year old in Ukupseni who had just had their *inna mutiki* ceremonies. The *yaagwa sergusa* marks the beginning of the rite of passage, and in this case a physical cue formally separates the young girl from her state prior to her full development into a new one. With the physical cue come minor changes in socialisation of the young girl, but in this case the full force of what the RPP model calls step 4 of new environmental demands do not begin until after the whole process has been completed, and this takes some time. At the beginning of the journey the young girl is generally unaware of what the ceremony has in store for her or how it will facilitate her passage into woman hood.

The young girls described the experience of being in the *surba* as uncomfortable. During the time in relative isolation they started to think about how their lives had changed for ever, they are no longer young girls. On the one hand, becoming a woman is an exciting event but on the other it brings responsibilities. One of the girls emphasized that the future felt unknown and this made her feel unsafe and insecure. The *yaagwa sergusa* ceremony, using the *surba*, encourages the young girls to reflect upon their own developmental process while marking that a profound change is occurring in them. The experience of the surba produces a sense of anxiety and fear that would suggest the beginning of a liminal period, which is characterised by ambiguity through self-reflection.

201

The *inna* rituals are emotional experiences for the young girls. The thirteen year old going through the *inna mutiki* was visibly frightened during the time the *iet* was cutting her hair. A few days after the event, she told me that while she was scared of what would happen she trusted those around her to make sure she would not be hurt. She relayed to me how it felt like being taken through a dark alley; she was not sure how long it was but knew she would come out the other end. The experiences related to the *inna* ceremony suggest that the liminal period continues, and aspects of the activation and agony steps of the RPP are described. There is some similarity in the feelings expressed as those described in the case of male circumcision ceremonies (V. Turner, 1967, p. 101). However, the degree of ordeal that Ndembu boys are put through far surpasses the fear of having loud and inebriated women cutting one's hair. None the less, the similarities are obvious, suggesting that the young girl during the inna ceremony experiences liminality.

One of the girls described her feeling at the end of the process as enjoyable, exhilarating, and very positive. I spoke to this girl the day after the event and this might have influenced her perception since the following day the village is still buzzing from the effects of the previous day's festivities. None the less, there are elements of the numinosity step of the RPP in her description, which is part of the phase of transition. This also fits well with the beginning of the social changes the girl experiences after the *inna* – she begins to have more responsibility in the household. This leads into the final stages of the transition into her new identity and role in the family and community.

Experience of the facilitators and participants

During the years that I have been working with the Kuna I often wondered how people participating in the rituals interpreted their meaning, and how this compared to the meaning given the rituals by those facilitating them. The most common response to my inquiry into why certain aspects of the ceremonies are performed as they are, was that it was tradition and protocol to do things a certain way. An example is when I asked the grandmother of the young girl for whom a *yaagwa sergusa* ceremony was being performed why the girl is bathed in salt water she replied *Because it is the way our ancestors have always done it* (Field Notes, Ukupseni, March 2008). After many such conversations in both Colebir and Ukupseni about the ritual stages and their meaning, I have now ruled out my initial assumption that people simply did not want

to share the information with me. While this was certainly true in some cases, especially with people I had not established a personal relationship with, my analysis leads me to conclude that most participants are not consciously aware (have not thought about) the developmental process the ritual is facilitating. There is no doubt that their participation in the ritual is important for the young girl and the collective as a whole, and it is meaningful to them. It has an important and obvious effect on building and maintaining the connections between people, and this is felt strongly by the participants. Understanding of the ritual process for personhood development, though, is the job of the ritual specialists. This illustrates that there is a level of trust in the leaders and general process used, based on it being a practice that has been passed down from generation to generation.

To understand further how the rituals facilitate personhood development, I spoke with the ritual specialists. I did not ask or expect the three *gandur* I spoke with to share with me the meaning of the sacred ritual, not only because I would be unable to comprehend what takes a lifetime of training to understand, but also because I would be asking them to share esoteric knowledge with an outsider. We did, however, discuss the role of the ritual for the young girl and how this relates to her interaction with the collective without speaking of the sacred metaphors used. In these conversations, specialists reflexively spoke about the practice as facilitating the development of the young girl into a fully grown woman. This highlights the qualities that were discussed in Chapter 6 as important for leadership.

According to the interpretations of one *gandur*, together, all of the parts of the ceremony, starting from the *yaagwa sergusa* and ending in the *inna suit*, are a system that uses metaphors to experientially teach and prepare the young girl for her future as an adult.

> *The inna is about teaching her how to live, all together it is to teach her that there are many different directions, but she can only have one way of living, it brings together all of them.* (G 2)

This quote points to an integrating and unifying approach to developing the person. The transition into adulthood was highlighted by the female specialists involved when they explained how, together, the parts of the ceremonies portray to the young girl the reality of life as a woman so that she may handle adulthood. She is taught that the happy and sad parts of life are also the extraordinary and beautiful aspects of life. It is hoped that through the ritual the young girl will be able to embrace her role in life

based on a realistic outlook on the trials and triumphs she will face (Field Notes, Colebir, March 2008).

For some young girls who live outside their communities today, the *inna* ceremonies are the only part of the process that is performed. Although these rituals are generally continued today for those growing up in their communities, the frequency of performance varies across families and communities. Community regulations regarding ritual practice differ from community to community, in accordance with the self governance model of Kuna communities. In Colebir the fulfilment of all of the rituals in the process is obligatory, and failure to do so leads to punishment, while in Ukupseni the practice of the rituals is optional for all and there are no repercussions for not holding them.

These rituals are less frequently practiced in Ukupseni overall and, while the regulations might have something to do with this, the main factors influencing a family's decision on whether to host the ceremony for the young girls are financial. The gradual shift from traditional agricultural practices to other forms of income generation occurring in Ukupseni at a higher rate than in Colebir mean that sugar cane which is fermented to make *inna* has become less available. When this is combined with a general decrease in collective participation in Ukupseni and an increase in population size, hosting an *inna* ceremony becomes a significant expense for families. None the less, during the summer months of field work in Ukupseni three girls who lived in the city returned to have their *yaagwa sergusa* ceremony and their families intend to have the *inna* ceremony when they are financially able to.

One of the *gandur* I spoke to was adamant that the entire process must be conducted in order to have the desired effect on the young girl. It is the experience of the entire process that is fundamental to the development of the young girl, according to him. He said that today the rituals are thought of more as a festive collective process, and while this is positive for the community as a whole, he is concerned that young girls are no longer learning to be women as they should. This he related to social problems in the community such as the increase in teenage pregnancy (Field Notes, Ukupseni March 2008).

Implications for Transformative Change

The RPP model was used as a framework for analysing the process of the ritual and has shown that it contains stages and steps that are similar to those of rites of passage.

This analysis coincides with those of Navajo and Ndembu coming of age rituals as rites of passage (Markstrom & Iborra, 2003; Turner, 1967). The phases that are most interesting for the development of individuals who can engage in deep reflection for transformative change are those referred to as separation and transition in the RPP, that include aspects of liminality, activation and agony. Turner is well known for his thorough examination of Ndembu rituals and development of the concept of liminality as the 'betwixt and between' states (Turner, 1967, pp. 93-111). Analysing the liminal phase, according to Turner, can provide insights into the building blocks of a culture (Turner, 1967, p. 110), for it is in this ambiguous state that individuals are in touch with the fundamental aspects that unify all members of a culture. As a phase of self-reflection, initiates are transformed into individuals who may engage with the deeper aspects of their culture.

The theory of liminality has also been used to analyse the ritual practice of initiating shamans in Amazonian tribes (Lewis, 2008). The transformation in these cases is much more profound than in the case of coming of age rituals, but helps stress the use of liminality in personal transformations at deep levels. Liminality helps explain the process through which an initiate is transformed into a shaman. This usually requires the person to experience illness or a state of vulnerability that brings a calling. The person is transformed through a liminal phase of reflection and emerges as a shaman. One of the interesting points that Lewis makes is that liminality requires a cultural context that can help guide one through ambiguity that arises from a crisis. The Kuna rituals described are understood as being embedded in a socio-cultural context that guides the initiate. This highlights the importance of the participation of the collective in the process.

For transformative changes in the collective, individuals require the ability to engage with the problem at hand at a deep level. Coming of age rituals are examples of processes where, at a pivotal time in the development of identity and personhood, at puberty, young girls are facilitated through a process that uses self-reflection to transform them into women. For the young girl involved, an experience of letting go of oneself and engaging at a deep, spiritual level with the cosmos, is the first experience of guided transformation. The experience at this individual level, facilitated by the collective and involving participation of the collective has the potential to develop the ability of individuals to engage with the deeper levels required for transformative collective change when faced with crises.

7.4.4 Collective Reflection Rituals

In the previous section the role of ritual in providing individuals the experience of deep reflection for personal transformation was discussed as important for developing the capacity to engage in deep transformative change. Turner (1974; V. Turner, 1979) has extended the use of liminality in rites of passage to interpret rituals that facilitate collective crises, when a whole society needs to make major changes. Public liminality is the process through which this occurs. The *inna* rituals described above as part of the rites of passage of young girls might also be viewed as spaces for public liminality. Their festive nature, and the inebriation of the majority of the collective are times when boundaries are easily transgressed, and the collective engages in ambiguity and uncertainty.

There is, however, one Kuna ritual that is the best example of the use of public liminality during times of crisis. It is highly sacred and protected, and while it is mentioned in many texts, it has only been analysed in any depth in a few (Chapin, 1983; Howe, 1976). It has been described as an exorcism ritual (Howe, 1976) because of its purpose of expelling evil spirits. Instead of calling it *neg absoget* – which refers to the cleansing of the environment by the *absoget* (converser) and is a name used to refer to it by specialists, I will refer to it as the *war uet* (tobacco smoking) ritual. While this might create some confusion as tobacco smoking is part of many Kuna rituals, I base my choice on common usage of the term in Ukupseni and Colebir where it is used to refer to this particular ritual. Further, when it is referred to as *war uet* the speaker is emphasizing how the collective participates in the ritual, and for this analysis of it as a collective reflection ritual this is appropriate.

The *war uet* ritual is infrequently performed in Kuna Yala today and is the only ritual that I have known communities to not allow foreigners participation[17]. In 2002 I was living in Colebir when a series of deaths due to malaria and a child drowning in the river led to the community decision to hold a *war uet*. At the time 70% of the population was infected with malaria (personal communication, Ministry of Health Vector Control Officer conducting epidemiological studies at the time) and there was a general sense of imbalance in the community. Howe (1976) similarly describes the situation in 1971 that provoked the ritual as comprising several events including illness, deaths and visitation by evil spirits and argued that the ritual works on three

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[17] I understand that recently a researcher was allowed to remain in a community during a *war uet* ritual but did not participate in the ritual.

levels: (a) attempting to solve 'objective' problems such as disease; (b) ridding the community of the evil spirits that are behind the disease; and, (c) working on the 'subjective' emotions and experience of the situation.

Preparation for the *war uet* in Colebir in 2002 took several weeks as supplies had to be sent from Panama City and various herbal medicines had to be collected. There is no *absoget* in Colebir so the community had to arrange for one to come from the village of Mammidupu. When the preparations were finished, neighbouring communities were notified and the community was closed to communication before the ritual began. It remained under quarantine for eight days and only minimal necessary contact such as for transporting food and resources was allowed with people outside the community, Kuna and non-Kuna alike. I was asked to leave the community and the *saila* explained to me that this was because they did not allow non-Kuna to participate. Since I have not experienced the *war uet* ceremony first hand, my analysis of the ritual as a space for public liminality is based on conversations with ritual specialists and participants in Colebir. The descriptions I have been given are consistent with the description and analyses provided by others (Chapin, 1983; Howe, 1976)

During the eight days of the ritual, the entire community gathers in *onmaked nega* (or another large building) and while the *absoget* chants the *absoget igar* and the *nele* interprets the spirit world, the participants sit on small stools and smoke tobacco. As the narrative of the *absoget igar* tells (the story is often chanted by *sailagan* in communities and interpreted by *argar*) smoke from the tobacco and burning medicine such as hot peppers and cocoa seeds is used by good spirits to make a drink that is used to inebriate evil spirits that are causing the crisis. While in an inebriated state, the evil spirits are then expelled. Large carvings of dolls from balsa wood, called *ukkurwargan* are smoked into life and help the good spirits. The *absoget* takes these dolls with him on his journey through his chanting. In Colebir, the dolls were later placed near the stagnant pool of water that was found to be the vehicle through which the evil spirits were bringing disease to the community.

After the *war uet* ritual, the community organised work groups to fill in a stagnant pool of water that had been formed after the river had flooded, with sand from the nearby beach. I was not present in the meetings that led to these decisions, but the *saila* gave me several reasons for deciding to fill in the pool of water: (i) the *absoget* had located the evil spirits in the pool of water; (ii) caimans that were seen in the pool

of water were thought to be bringing the evil spirits up to the surface and creating the disease and; (iii) the spirit of a young girl who had drowned in the river years earlier was seen by the *nele*, she pointed to the pool of water as the cause of the disease. These reasons point to the three levels of action of the *war uet* ritual as described by Howe (1976). The physical problem of mosquitoes breeding in the stagnant water was dealt with only when the spiritual problem that was underneath it was tackled. The result of the combination of approaches was a renewed sense of balance for community members.

Public liminality for transformative change

The role of the *absoget* in this ritual is similar to that of the *gandur* in the *inna* ceremonies; their chanted *igar* is the medium that facilitates the transition of the initiate. It seems possible that *inna* ritual may also be a space for public liminality in the same way carnivals are described as liminal by Turner (1979). The intoxication and festive air of the *inna* provides a space where roles are transgressed, and while this may allow the collective to engage in social anti-structure, as Turner calls it, it differs from the liminality of the *war uet* rituals. The *war uet* are practiced specifically to deal with a crisis. The Kuna worldview interprets the afflictions felt by people and the community as connected to the spiritual realms. Crisis therefore in the form of an epidemic is attributed to happenings in the spiritual realms.

Several aspects of the *war uet* ritual point to it as an effective vehicle for facilitating public liminality that can support transformative change for dealing with crises. As Howe (1976) says:

> The exorcism has many features of a rite of passage. It separates the community from the bad times with a brief period set apart from ordinary life, a period seemingly of considerable physical demands on the participants. It appears very likely, moreover, that the great amount of smoking involved results in altered physiological and psychological states which contribute to the work of the rituals. The Cuna in fact may be a little drunk themselves while they are trying to liquor up the spirits. (p. 75)

Viewed as a rite of passage, the *war uet* is a process that moves the community from a state of imbalance or illness to a healthy state. It is a collective process because it requires that all members of the community follow strict rules of personal conduct (such as men and women not engaging in sexual activity), the community's attention is entirely focused on the collective task at hand. This reinforces the sense of

solidarity. The narrative of the *absoget igar* is generally known by the collective because it is sometimes referred to by *sailagan* in their chanting. The general knowledge of the purpose and narrative of the chant helps the collective focus on their job in the process; to produce smoke that will inebriate the evil spirits.

The liminal period lasts for the eight days of smoking. As Howe suggests, it is likely that the tobacco smoking brings people into altered states of consciousness. Tobacco is used by Amazonian shamans in healing rituals and is known to have hallucinogenic effects. There is no evidence, however, that the Kuna participants of the *war uet* hallucinate during the ritual. The *nele* uses the chanting and smoke to facilitate the journey of the wooden dolls to the realm where the evil spirits are lurking. Shamanic journeying through altered states of consciousness is common practice in Amazonian and other indigenous peoples. Some argue that it supports transformations in those participating (Lewis, 2008). The journey is a liminal experience, and it is during this period of ambiguity that, together, the community may engage in what Turner (1974, p. 45) has called 'communitas'. In this state of anti-structure all formal social relations are broken, bonds are created between people that are based on sharing of the fundamental non-rational aspects of their social and cultural systems. It is here that the whole can be visualised, and all become integrated into one. In this state, individuals collectively move beyond beliefs and rational thought processes to engage in a deeper level of intuition, creativity and relearning. This public liminality enables creative adaptive responses that not only help overcome the crisis at hand, but also can renew the social structures allowing transformative changes to take place.

Considering that I have not had first hand experience of the *war uet* ritual, the analysis I have presented can only lead to suggestions of how the ritual may support transformative changes of the collective. Use of liminality theory to understand how group processes support transformative changes in individuals should ideally include first hand experience, as the changes are occurring at a deeply personal and emotional level and may only be understood phenomenologically. An example of such as an account is that of Holloman (1974), who analysed her own experience as a participant in a workshop that aimed to facilitate changes in individuals through a human potential or human encounter methodology. Her analysis of being in a liminal phase and experiencing deeply transformative changes in herself creates a very rich phenomenological narrative. She points out, however, that the experience of others

may not have been similar to hers, and that some participants were not affected at all. Thus it is unclear what the transformational potential of the *war uet* ritual is on particular individuals as I do not have a phenomenological account of a participant, and it is likely that the individual experiences vary greatly among the participants. There is enough evidence to suggest though that the ritual is an effective process for public liminality.

7.5 Conclusion

The chapter presented analysis of practices that foster individual behaviours for collective adaptive capacity. Kuna Yala, understood as an IBCS, is made up of embedded levels of collectivity. The Kuna experience their world through interacting with embedded spheres in daily practice. As Howe (1974, p. 320) has already noted, individuals manage certain aspects of their practice within communities both through interacting with others, and through interacting with the whole community. Being embedded therefore does not mean that the individual is restricted to interacting with the next immediate level, but rather that there is coordination between the levels. The following chapter on networks looks more closely at how this coordination occurs and its implications for the dynamics of the IBCS.

When the field of interactions through which a person is developing includes the entire biocultural system, interactions between the individual person, the group, the community, and the ecosystems are more likely to be part of one's awareness. Noticing these interactions creates a strong relationship between the person and the ecosystems. This closeness allows feedback to be felt directly by individuals, as well as the collective. Feedback received through interactions of individuals is shared with the collective through daily exchanges, providing a viable vehicle for monitoring ecosystem states. The monitoring system is fundamental to collective decision making and adaptations that can support sustainable development. Maintaining individual 'awareness' of interactions is therefore crucial for endogenous development.

Fostering endogenous development in CASs requires a delicate balance between conservation and change so that order emerges out of self-organisation. In Chapter 6, I discussed how leaders play an important role in nurturing emergent phenomena through facilitating dynamic interactions between participants in collective life. Individual persons, discussed in this chapter, are participants of self-organising collective behaviours. In a similar way to leaders, individuals participate both in goal

seeking social behaviours, through carrying out specific tasks, and support self-organisation of the collective through interacting without a specific goal. The seemingly contradictory behaviours of persons - as unique individuals and as collective agents – enable social mobilisation for specific tasks, and allow individual freedom of participation, for self-organisation.

diZerega's (2000) model of self-organising social systems argues that citizenship, the participation in collective life, is a moral relationship of equality, of which the underlying goal is freedom. Self-organising behaviours of collectives thus require that individuals participate in collective life freely. Kuna communities enable individual freedom, while simultaneously cultivating collective identity and practice. Personhood development is the process through which this is made possible. Individuality is an integral aspect of personhood, developed through a holistic process that uses different forms of teaching and views the person as an integrated whole. Spirituality is a fundamental aspect of personhood, the Kuna understand it both experientially, and through the *Bab Igar*. The *Bab Igar* guides personhood development both implicitly through the actions of adults in rearing children, and more explicitly through chanting sessions for the whole community and in counselling.

Certain Kuna rituals support personhood development, such as the coming of age ceremonies of young girls. When seen as rites of passage, a state of liminality, important for collective identity development, supports self-reflection and experiencing of a deeper state of being. Applying Turner's (1974) interpretation of 'communitas' at this deeper state, the individual is able to feel a part of the whole cosmos. Through this process, persons become more reflexive and open, and are able to situate themselves as unique individuals that are part of a community.

Beyond the importance of rituals in building personhood, ritual experience of 'communitas' builds capacity for dealing with crisis. In moments of crisis, personal or collective, the experience of liminality enables transformation and creative adaptive responses. In Chapter 9, when different aspects of Kuna adaptive capacity are synthesized, these findings regarding transformative changes are incorporated into a multi level model of adaptive changes. Ritual practice as pivotal to this ability is related back to the framework of endogenous development and sustainability. Kuna ritual practice, therefore, helps build persons who support adaptive capacity, and enables transformative collective capacity.

It is necessary to note that the practices that have been described for personhood development in this chapter are undergoing significant changes in Kuna communities. Of particular relevance to this discussion are the implications of changing education practices from a family and community based system to a formal schooling system. These challenges provide yet another opportunity to analyse Kuna adaptive capacity in action, through initiatives of the CGK and CGCK in responding to the changes. An intercultural bilingual education Kuna initiative is one response that emerged out of concern with the failure of the schooling system in Kuna Yala.

Chapter 8
Locally and Globally Interconnected Spheres

The mystery of life begins with the intricate web of interactions, integrating the millions of molecules within each organism. The enigma of society starts with the convoluted structure of the social network. [...] Therefore, networks are the prerequisite for describing any complex system, indicating that complexity theory must inevitably stand on the shoulders of network theory. (Barabasi, 2003, p. 238)

8.1 Introduction

In the previous two chapters I have discussed two socio-cultural processes that were found to be important for nurturing adaptive capacity of Kuna Yala. Ensuring that a diverse set of leaders has skills to enable adaptation and, developing individuals as collective agents for adaptation. This chapter is concerned with the third group of practices that were found to be important for adaptive capacity - networking.

I have previously argued that one of the strengths and challenges of the CASs framework is its enabling of a cross-scale analysis of the system. The relevant levels of collectivity within Kuna Yala identified in Chapter 3 are individuals, groups, communities and Comarca level institutions. This chapter builds upon the community level analysis of Chapters 6 and 7, in which networks were recognised as important for adaptive leadership and personhood development. In this chapter, I explicitly analyse the practice of networking.

The chapter begins by building a framework for analysing networks in a CAS, focusing on the role of networks in supporting adaptive capacity. The second part of the chapter discusses networking practice within communities, focusing on links between different groups within Ukupseni and Colebir. The chapter then turns to Comarca-wide networking practices, first describing the Comarca institutional structures, followed by analysis of the different types of networking practice that support its adaptive capacity. Finally, networking that links the Comarca into national and international processes is discussed, illustrating some of the challenges the Kuna face in the current context of globalisation.

8.2 Analysing Social Networks in a CAS

My aim in this section is to build a framework for the discussion of Kuna networking practice that follows. I do this through reviewing how the function and structure of social networks have been theorised and inquired into, and how this can be useful for understanding adaptive capacity of an IBCS. This review is necessarily brief and directed, as it intends to explicate how social networks can be understood within a CASs approach to illustrate where I have focused my analysis, without providing an exhaustive review of the field of social network analysis.

The vast and growing field of social networks and social network analysis has a long and multi-disciplinary history, with sociologists, psychologists and anthropologists playing important roles in its development (Wasserman & Faust, 1994). The common interest among theorists and proponents since the 1930s has been to develop methods for analysing structure in social systems (Degenne & Forse, 1999). The structural approach has led to an interest in visualising social networks formed through interactions between individuals and collectives. My interest is in understanding social interactions within collective levels of Kuna Yala which are important for adaptation and self-organisation. A useful starting point, therefore, is to review how interactions between individuals and collectives have been theorised in terms of collective goals.

The research field of social capital analyses networks as factors in cooperation and collective action, and has been applied to various fields interested in social well-being (Hagan, MacMillan, & Wheaton, 1996; Weede, 1992; Zhou & Bankston, 1996). Putnam (2000) is one of the leading social capital theorists, and he describes three types of networks, based on the quality of connections they support; he calls them bonding, bridging and linking ties. Bonding ties are relations that are common among homogeneous groups, while bridging relations are those formed between individuals of different groups who are more distant, and tend to be weaker than bonding ties. Linking relations are those that cross different social strata or hierarchical levels.

Bonding links between members of homogeneous groups, such as a community or church group are built through trust and reciprocity. I have discussed bonding ties in Chapter 7 as important for building collective identity and supporting collective action in Kuna collectives. The most interesting and important interactions for adaptive capacity, however, are those that link across different groups or communities

– called bridging links. As Granovetter (1973) pointed out in his seminal paper on 'the strength of weak ties', it is the networks outside of one's immediate social group that are the most effective to help one achieve desired goals. Bridging links require more energy or effort to maintain, hence, they are not as easily formed yet the benefits are great. I have already shown in Chapter 6 that linking across different groups within community management structures supports information exchange that is important in governance and decision making in situations of complexity where multiple viewpoints and knowledges are necessary. A more detailed understanding of how such bridging links are formed and maintained can therefore be informative in this study of adaptive capacity.

The role of bridging links in collaboration and adaptation in a CAS has been analysed in resource management. Collaboration is necessary for collective management of resources across multiple stakeholders, and adaptation is necessary for dealing with change and uncertainty. Social learning which is facilitated by social networks across different groups is important for both (Allen & Kilvington, 2002; Keen, Brown, & Dyball, 2005; Pretty, 2003; Pretty & Frank, 2000; Scheffer, Westley, Brock, & Homgren, 2002). The adaptive co-management approach also illustrates the importance of linking across scales (Carlsson & Berkes, 2005; Singleton, 1998). Networks that support adaptive co-management include bridging links between stakeholders of difference groups, and cross–scale links between stakeholders at different levels of governance (Hahn, Schutlz, Folke, & Olsson, 2008; Olsson, Folke, & Hahn, 2004). Both horizontal (between groups at the same level within a CAS) and vertical (across scales of a CAS) networking that is flexible and dynamic is necessary for adaptation and management of resilient complex systems (Berkes, 2002). This CASs approach illustrates that understanding bridging and linking networking practice can be informative in a study of adaptive capacity.

Network analysis has benefited from advances in modelling technology, and today, some structural network analysts are progressing in the field of modelling complex networks. Research into real-world networks has now been undertaken in fields as diverse as social systems (Newman, 2001a, 2001b) and biological systems (Jeong, Tombor, Albert, Oltvai, & Barabasi, 2000) or looking, for example, at the WorldWideWeb (Broder et al., 2000). The structures of these real-world networks are referred to as complex, because they display features of self-organisation (Strogatz, 2001) and are neither regular nor random, yet somewhere in between. Understanding

the structure of complex networks can help us to build more robust and resilient real-world networks. For my interest in social networks of a CAS, understanding the properties of complex networks that have already been described through modelling and empirical research can help illustrate key structural forms and patterns to focus analysis.

Early structural understanding of networks used mathematical theories to model random and regular networks. But the topology of complex networks that have since been described are found to lie somewhere between regular and random; they are on the 'edge of chaos' (Kauffman, 1996) exhibiting emerging patterns of order. One such complex model was studied by Watts and Stogatz (1998), who found that by adding some random connections into a regular network, a topology emerged with a 'small world' effect. The 'small world' network topology has two key characteristics. First, they exhibit a short average path length between any two nodes selected randomly. This means that while large networks have nodes that are very far from each other, they can be reached easily through a pathway of connections, making them efficient. In a Kuna community, for example, information or news travels throughout the social network rapidly, thus supporting information exchange that supports collective adaptive capacity.

Second, they exhibit a high amount of triadic clustering. This refers to tightly knit groups forming within the network, starting with triadic connections - clusters of three nodes that are each connected to one another. For the current analysis of adaptive capacity, what this property points to is that complex networks contain groups which emerge through clustering. These groups are also known as modules (Ravasz & Barabasi, 2003; Ravasz, Somera, Mongru, Oltvai, & Barabasi, 2002). For example, in a Kuna community, there are heterogeneous groups that form around particular interests, such as a bakery group or a sewing group. Modularity, as this phenomenon is known, and as Callebaut (2005) suggests, is ubiquitous in all natural complex systems, including culture and technology. Beyond an awareness of modularity as a structural feature of complex networks, for this analysis on adaptive capacity, what is important is to understand how the modules remain connected into a network that is adaptive and resilient. Bonding ties are important within the modules, while bridging links are important between the modules.

Another type of complex network has been described by Barabasi and Albert (1999) and is known as a 'scale-free' network. The key characteristic of this type of

network that adds to an understanding of complex network topology is that it exhibits a power law degree distribution. In other words, a few nodes are highly connected (and known as hubs) while most nodes have few connections (Barabasi, 2009; Pastor-Satorras, Vázquez, & Vespignani, 2001). In a Kuna community, highly connected individuals are leaders, while the majority of the population maintain a smaller number of social connections. Further, a mechanism for the creation of this scale-free topology was proposed: (i) the network grows one node at a time, and (ii) each new node has a preference for attaching itself to the higher connected nodes, in time generating hubs (Barabasi & Albert, 1999). In other words, these networks exhibit signs of self-organising behaviour, just like evolving complex systems.

The field of complex network analysis is a new and growing field, and will no doubt progress our understanding of complexity and self-organisation with the aid of sophisticated modelling in future years. Thus far what has been shown is that real world networks tend to have three main characteristics as described by 'small world' and 'scale- free' network topologies: (i) there is a small average path length between nodes, (ii) they tend to form clusters of small tight groups, and in turn modules and (iii) there are a few highly connected nodes and many less connected nodes. Some network analysts have started to bring together these complementary topological features showing that complex networks are organised into modules at different scales (Ravasz et al., 2002). Using a CASs framework, this means that small modules or subsystems are embedded in larger modules or subsystems. Holding the modules together is connections between hubs within each, bridging links horizontally and cross-scale links. The three characteristics of complex networks together illustrate how a real world network emerges from a process of self-organisation and how its structure may be resilient.

Understanding the topology of a network is intricately related to understanding the functions of networks and how they can be improved or influenced (Serrat, 2009; Strogatz, 2001). What complex network topologies bring to analysis of social networks of CASs is key characteristics that enable understanding of topological vulnerability and robustness. Being able to adapt both enhances resilience and is dependent upon resilience, and structure seems to play an important role. Structural vulnerability lies in the importance of hubs maintaining the overall structure. Leaders, who are the hubs in community social networks, are targets for lobbying for social change and for external initiatives attempting to enter a community. In larger social

networks, such as the whole Comarca, a hub might be an institutional structure that connects many. Vulnerability becomes evident if there are only a few hubs; if they disappear or collapse then the whole network may be compromised. The hubs are also important as mediators between levels of modules embedded across scales, and when they are removed or compromised, their modular and complex structure may fall apart. Hubs are a potential weakness because they may be targeted, so while they are pivotal in keeping the structure together, they simultaneously increase the vulnerability of the entire system. Understanding this paradoxical nature of leaders within social networks and the role of other mediating and linking individuals is important for building adaptive capacity and resilience.

Structural robustness, on the other hand, is supported through the ability of the modular network to decompose without losing its key functions. This is the case when modules are duplicated, in communities, for example, there are various neighbourhood groups that can perform similar functions in supporting overall community processes. If for example, one group disintegrates, then others can take its place, so that the whole network is not undermined. In the case of differentiated modules, departments within institutions, for example, when one module is lost, then the functionality of the entire system could be compromised. Another aspect of modularity that is relevant to this analysis of CASs is the high level of diversity that is maintained through the semi-autonomous development process of each module. Diversity is an important resource for adaptive capacity and resilience, and in Kuna Yala I have already mentioned how a semi-autonomous process of community self-organisation maintains high diversity within the system.

8.2.1 Analysing Kuna networking practice

A brief review of network analysis has shown that both a functional and a structural approach to social networks are useful for understanding how social networks influence adaptive capacity of collectives. That the Kuna have used their networking abilities to their advantage has already been noted by others (Holloman, 1969; Howe, 1974; Martinez Mauri, 2007). The aim of the remaining sections of this chapter is to add to this literature, by further analysing the networking practices of the Kuna, with a particular focus on those aspects of network building and maintenance that are relevant to adaptive capacity from a CASs perspective. During my time in the field I

focused on understanding how bridging links are formed and maintained across different groups within Ukupseni and Colebir and the Comarca wide processes, and how cross-scale links are built. I did not create formal models of Kuna social networks with computer simulations because my aim was to understand networking practices as they occur within real life social processes. Networking is one important feature of adaptive capacity, but it was not my sole interest, making it important to understand how networking meshes with other practices to produce holistic goals.

Social networks are often analysed through an institutional perspective. In Kuna communities, as I have shown already in Chapter 6, adaptive capacity is not supported solely through formal governance models, but rather through informal networks that support information exchange. Mendizabal (2006) similarly differentiates, in a study of research policy networks, between networks with a mandate and those without. For information exchange and social learning necessary in collaboration and adaptation both are useful. A distinction between formal and informal networks and how their functional attributes support adaptive capacity is helpful for building understanding of how the Kuna nurture development as a combination of spontaneous self-organisation of society and mediated self-organisation through social institutions. Formal networks tend to be analysed in terms of how they support performance as dictated by their institutional mandate, and is related to administrative leadership as was analysed in Chapter 6. By adding an informal network perspective, however, one can visualise how self-organisation is nurtured through organic social interactions.

Beyond the formal and informal bridging and linking networks, I will add a topological vulnerability and robustness lens to the analysis, in order to make use of the characteristics identified in real world complex network that may help illustrate where work can be done to improve resilience and adaptive capacity.

8.3 Bridging Links within Ukupseni and Colebir

I begin the discussion on Kuna networking through presenting results of in-depth inquiry into networking practice undertaken in Ukupseni and Colebir. These communities are conceptually one level of the IBCS of Kuna Yala within which I analysed networking. In some ways these communities are homogeneous, and bonding links within Ukupseni and Colebir are strong, as was shown in Chapter 7 on collective identity. But they are also heterogeneous, and what I focus on here is

bridging links between groups. As noted above, I analyse both formal and informal links.

8.3.1 Formal bridging links

Formal aspects of community social networks are made up of interactions within and between the community management and *onmaked* governance structures. These are more evident in Ukupseni, where the community structures are more complex. Bridging links connect the committees that make up the community management structure of Ukupseni. Each committee forms its own tightly connected module with the most connected central figures as hubs. Some members have positions in several committees and so provide weak links between different groups of the horizontal network. All of these middle level leaders interact with each other through their formal positions, and all interact within the *onmaked* system. The increasing challenge leaders face in negotiating between different worldviews and problem areas (see Section 6.5) highlights the importance of horizontal networking practice for supporting adaptive capacity.

A similar pattern can be discerned in Colebir, when analysing ritual networks. Tight bonds between the participants of ritual networks occur due to the interactions and relationships that build trust and reciprocity over time, especially between students and teachers. Closely connected groups of specialists, for example *inadurgan*, are loosely connected to other specialist groups through some participants engaging in multiple groups. Like the governance networks, they also facilitate exchange of information horizontally between ritual leaders. These networks, however, are more difficult to visualise, and this is likely due to the decline of ritual life in Kuna communities, and the expansion of institutions and new leadership roles in larger communities.

The two networks in the above examples of formal bridging links are functionally different. Committees are endowed with a management role and their relationships and activities centre on the accomplishment of their particular jobs. Ritual participants, on the other hand, hold responsibilities to the collective through their specialist role. The modular pattern arising out of bridging connections, however, provides a common structure of tightly internally connected groups that are loosely

connected to each other through hubs. The hubs are highly connected individuals, who are leaders of their modules.

The positioning of leaders as hubs of loosely connected modules through which information flows means that they have access to information flowing through different modules, supporting their capacity to manage complexity by exposing them to opinions and views of distinct "communities" of opinion within the collective. This supports the dialogical practice of the *onmaked* system. Bridging links can facilitate the flow of information towards the centre of the network, so that information from the outer modules of the network can come towards *onmaked nega* and be used in decision making. Likewise, information can flow out of the central hubs to the modules.

8.3.2 Bridging across interest groups

A Kuna community is made up of many distinct interest groups, as groups of individuals that come together for a shared interest. In both Ukupseni and Colebir there are diverse interest groups. Some focus on production of agricultural goods, others on business activities such as bakeries or fishing groups, and others still on more leisurely interests such as dancing *gammu burwi*. Interest groups form bridging links that loosely connect parts of the community. The parts are structural modules that are semi-autonomous because they form out of their own process of self-organisation but, all make up the community level of Kuna Yala. Structural flexibility and robustness, both indicators of resilience and adaptive capacity can be visualised through the formation of new groups or modules. I will use an example of the formation and function of one interest group to analyse structural flexibility and robustness.

The group *Mor Ginnit* takes its name from the red attire used by the revolutionaries in 1925. The group performs a re-enactment of the events that took place in the revolution of 1925 (see Chapter 3 for more detail on the revolution), during the festivities that commemorate the revolution every February (see Photos 8.1 – 8.5). I collaborated with the *Mor Ginnit* groups in Ukupseni and in Colebir for several years and continued the collaboration during the time I was conducting field work. For this analysis, I spoke in particular with Remigion Morgan, one of the co-founders of the group, who provided a historical account of its creation.

Photo 8.1 Re-enacting the events that led to the Kuna Revolution

Photo 8.2 *Mor Ginnit* preparation for attack on the Colonial Police returning from Tupile

The creation of *Mor Ginnit* in Ukupseni is related to the important role the community played in the 1925 revolution. Ukupseni was one of the communities in which a violent fight took place between the revolutionaries and the Colonial Police. The heroes of the revolution in Ukupseni started the tradition of commemorating the event in order to continue to reflect on the reasons behind their actions. The motivation behind the revolution came from the oppression of cultural identity and self-determination by the colonising forces. As the revolutionaries grew older and eventually passed away, the practice was taken up by younger members of the community, passing on the tradition of re-enacting the events. Morgan remembers watching these performances and listening to the stories of the revolution in *onmaked nega* when he was a young boy. As he grew older, the tradition was slowly beginning to fade.

During the 1980s a strong cultural revival movement involving groups of youth working in agricultural cooperatives was taking place all over the Comarca. These groups were seedbeds for revitalising the revolutionary ideas in young Kuna. At the same time in Ukupseni, the Catholic Church was facilitating a project of popular theatre, in which young Kuna were using drama to interpret stories from the *Bab Igar*. It was during this time that a group of interested youth who were leaders of agricultural groups came together to revitalise *Mor Ginnit*. The weak ties between leaders of different groups were used to form a new interest group. In 1985 they performed for the first time during the festivities, and have remained active ever

since. *Mor Ginnit* is an interest group that arose out of interactions between leaders of other groups, illustrating how the weak ties between leaders became an opportunity for creating a new module in the network of interest groups.

Photos 8.3 and **8.4** *Mor Ginnit* re-enacts the attack of the Kuna revolutionaries on the Colonial Police in Ukupseni and Colebir

Photo 8.5 *Mor Ginnit* celebrates a Kuna victory in 1925

Mor Ginnit is a particularly useful network for collective action because it brings together a wide range of individuals from different social spheres. The men and boys who participate as members of the *Mor Ginnit* group range in age from seven year olds to men in their forties. The network mimics the *onmaked* inclusiveness, with

members of churches, divers, agriculturalists, rebels and even some convicted of petty crimes all collaborating together. As mainly men participated in the revolution, *Mor Ginnit* is an organisation of boys and men, with their wives and family members supporting the group in their performances.

Morgan sees the role of the group as a network that reaches many otherwise isolated segments of Ukupseni's heterogeneous society. In 2002, when a group of leaders were interested in reaching the youth of Ukupseni to bridge the gap between the *dule igar* system and the modern ways in an attempt to tackle social problems, *Mor Ginnit* was used as an umbrella organisation for youth outreach. *Mor Ginnit* leaders have used the network as a forum for discussing a wide range of topics related to community development (e.g., an information seminar on climate change and analysis of a story from *Bab Igar* by a *saila*). Although the main objective of *Mor Ginnit* is to carry on the tradition and to keep alive the values of the revolution and collective memory, these examples of activities illustrate how it can be used as a vehicle for sharing information across a wide range of community social spheres.

Members of *Mor Ginnit* are tightly connected for a period of heightened activity leading up to the festivities while for the rest of the year the members are loosely joined or not joined at all. There is the potential for long term interaction between group members that helps establish trust and tightens bonds. Some of the members, like Morgan, have been involved since 1985. Long term interaction is unusual for community interest groups, such as those centred on entrepreneurial activities. In the latter, there is greater turnover of group membership. During the time I have been visiting Ukupseni (since 2000) I have witnessed a large number of small businesses start up, some continue in the same form, some die off completely and then are rejuvenated or adapted into new initiatives over time. *Mor Ginnit* is also unusual in that it offers opportunity for casual membership for most of the year, with little commitment, and heightened interaction during a short period of time centred on an entertaining and festive event.

The *Mor Ginnit* story illustrates that out of the arrangement of bonding and bridging links, new interest groups are created. This is possible because of a relatively tightly networked structure that allows interactions around a diversity of interests to foster emerging groups. I have witnessed a constant forming, disintegrating and reformation or re-organisation of interest groups or clusters of tightly connected individuals within Kuna communities. In the face of a particular challenge or change,

weak bridging links can become strong bonding links, forming new modules and reorganising the system. Shifting of social networks brings much flexibility and diversity to the overall structure – these are important elements for adaptive capacity and resilience in the face of change.

But too much shifting would make the system too weak and fragile. If participants of all of the clusters or groups constantly shifted, there would be no basic structure to hold the network together. What keeps the network from becoming too fragmented is the presence of a few constant points; leaders are relatively stable hubs, and connect people and modules to each other, while the participants of their groups may change. The leaders of agricultural groups, for example, became leaders of *Mor Ginnit*. Also, long standing networks such as *Mor Ginnit* or ritual networks are important for providing stability in the overall framework. The clustering effect of the interest groups creates modularity in the system, which increases flexibility and diversity, and structural integrity is maintained through relatively stable hubs and a number of longer term stable networks that form across bonding and bridging links.

In summary, this section has analysed bridging links formed between individuals who are interacting within formal and informal groups in Ukupseni and Colebir. Adaptation is supported functionally through horizontal exchange of information for social learning. The mixing of formal and informal networks in communities is inevitable. Social interactions between community members, leaders and non-leaders, produce a web of flexible networks which illustrate structural resilience. In Kuna communities, it would seem, therefore, that networking practice which is the result of organic processes of social interaction enable a blending of the formal and informal. This finding is significant for understanding adaptive capacity and self-organisation of Kuna communities. This will be further discussed in the concluding section of the chapter.

8.4 Comarca Governance Structures

In the rest of this chapter, I discuss networking practices at the Comarca level, paying particular attention to how networks connect modules and link across-scales, and how this supports adaptive capacity. Participants in the Comarca level processes emerge through the community processes discussed in Chapters 6 and 7, they are community leaders. Their participation in Comarca-wide processes is primarily accomplished

through the CGK and CGCK structures and processes. As complementary institutions, the CGK and CGCK facilitate governance together, but each has its own institutional arrangement. I begin with a description of the institutional structures of each, to provide the context for discussion on networking practice which encompasses more than just institutional interactions.

8.4.1 Congreso General Kuna structures

In Chapter 3 the 14 objectives of the CGK, as outlined in the constitution of the Comarca, are shown. In summary, they include the following: protecting and ensuring territorial and governance autonomy of the Comarca; developing, planning and managing all locally and externally driven and funded social, economic and ecological development and research activities in the Comarca; ensuring compliance of communities and individuals with and enforcement of Comarca laws; and, coordinating with all external institutions including the Panamanian State for the well-being of the Comarca.

An organisational chart of the CGK and its institutional structures is shown in Figure 10[18]. The Comarca is made up of 49 local community *onmaked* systems of governance with formally elected representatives. The communities participate in the General Assemblies of the CGK (at the top of Figure 10) that take place twice a year, through their elected delegates. Several Kuna NGOs are also accredited as participants in the General Assembly but have no voting rights. Voting is used for decision making only when consensus does not emerge from dialogue (it can take extended periods of dialogue before voting is used). The mandate of the CGK institutions is to support this collective decision making structure.

The executive committee is composed of the s*aila dummagan* (high chiefs), the secretaries, and the treasurer, all elected by the collective. Between the general assemblies, the executive committee has political authority and is able to make minor decisions that do not require consultation with the collective. The CGK Secretariat supports the three elected *saila dummagan* directly. The Administrative Secretariat is the body that is responsible for the administration of the CGK and Comarca finances. During the time of the field work a third Secretariat, focused on Tourism, was being established.

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[18] The organisational chart was developed through consultation with CGK staff and reflection group members and represents a consensus view rather than an official organisational chart

A number of support bodies are part of the institutional structures. The Collegiate Body of Advisors is made up of professional leaders who are support figures. They are called upon for support with specific tasks based on their expertise. As shown in Figure 10 they may support all institutional bodies. They are also eligible to become members of the work commissions. Two types of commission exist; the permanent commissions deal with areas where ongoing expertise is required such as agricultural production, and special commissions are set up *ad hoc* to deal with pressing issues.

The CGK has a registered Panamanian NGO which serves as a technical body, as well as being able to access funds for development projects. At the time of the field work the CGK and CGCK NGOs were being fused into one entity, and this merger was still not complete when I returned to Panama in April 2010. Figure 10 does not incorporate these changes because I do not have a clear picture of how the new arrangement will function; therefore, only the CGK NGO IDIKY (Instituto Para el Desarrollo Integral de Kuna Yala) is shown. Beyond the exact institutional structure, what is important to note is that there are several support bodies that enable professional Kuna to contribute to the functioning of the CGK as well as being part of the large number of leaders who are involved in the social networks created.
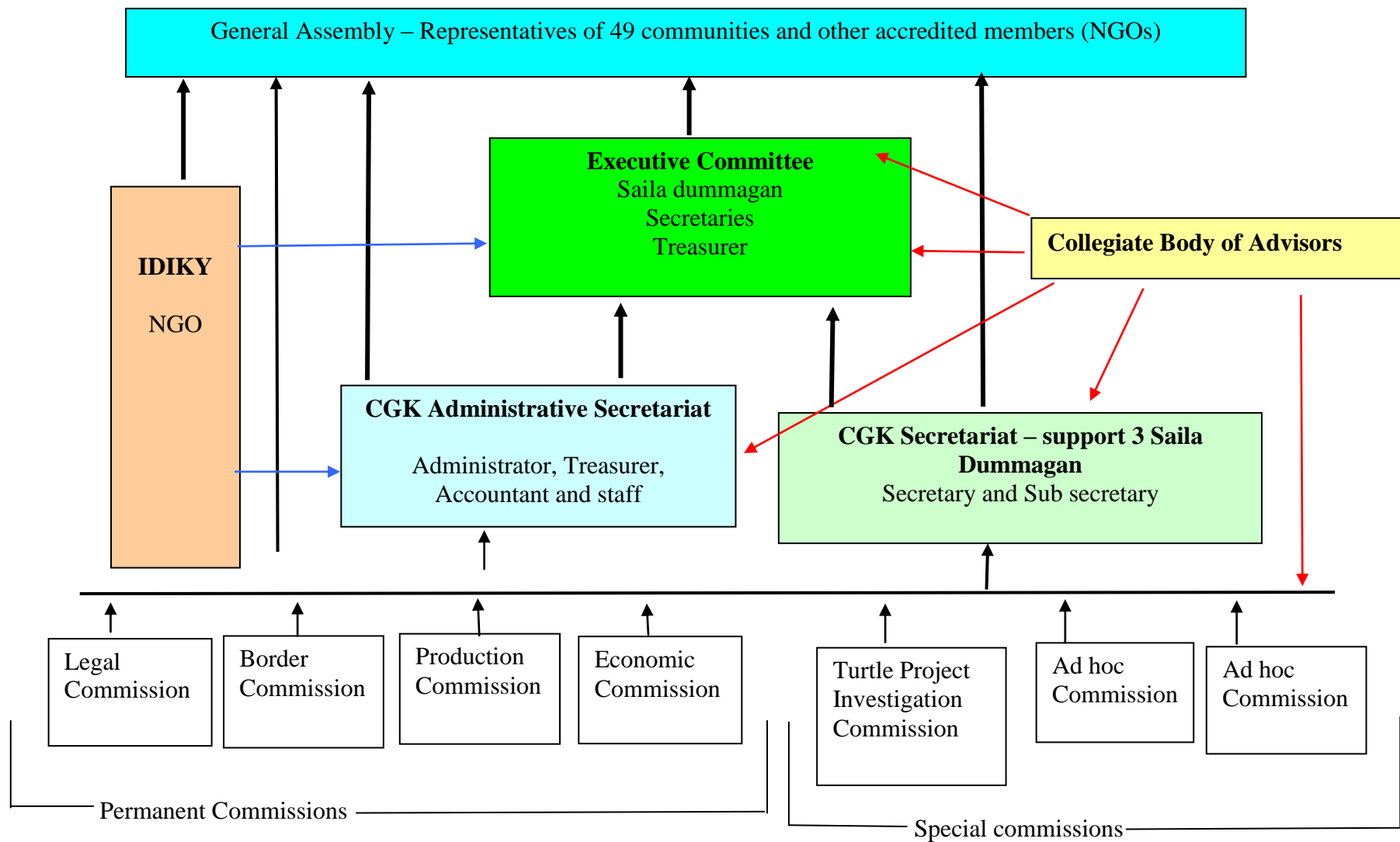
Figure 10 CGK organisational chart

8.4.2 Congreso General de la Cultura Kuna structures

The CGCK is the second Comarca level governance structure that functions in a complementary manner to the CGK. The CGCK uses the methodology of the singing gathering of the *onmaked* spiritual leadership system, and today this is supplemented with spoken meetings. The four objectives of the CGCK, presented in Chapter 3 are focused on internal strengthening through protection, conservation and development of Kuna culture and spirituality and communicating externally about the *dule igar* system. The CGCK is a recent addition to the Comarca governance structure, established in 1972 in response to a felt need to strengthen the spiritual and cultural development of Kuna Yala.

In the constitution of the Comarca, the CGCK is recognized as being the highest institution of religious expression, protection, conservation, and promotion of the historical and cultural heritage of the Kuna peoples of Kuna Yala (CGK, 2009). Unlike the CGK, its institutional structure is not well defined. This is likely in part due to what Howe (2009, p. 223) calls a "fuzzy division of labor with the administrative General Congress". As the CGCK is a recent addition to the Kuna institutional structures, it continues to be in a process of institutional strengthening, and needing to coordinate with the CGK. Further, at the time of my field work several major changes were underway within the CGCK structures, making it difficult to gain a consensus or accurate view of its organisational structure. For the first time since its conception, a new secretary was elected to the CGCK. It was thus a time of transition. Further, the merging of the two NGOs (mentioned in Section 8.4.1) has created a need for restructuring the CGCK institutions. Overall, therefore, the structure of the CGCK institutions as understood by leaders, participants and outsiders continues to be ambiguous. None the less, it is clear that the general governance structure of the CGCK is similar to that of the CGK in that the general assembly is comprised of representatives of the 49 local congresses of the communities, forming the collective decision making body which meets at least twice a year.

Three *saila dummagan* lead the CGCK, and are elected by the general assembly, as are their support team, which include a secretary and sub-secretary and administrative positions. Apart from these leaders, the constitution identifies a specialised commission which facilitates all CGCK processes. The commission is

comprised of six members elected by the general assembly, eligible leaders for the commission include *sailagan*, *argargan*, *sapin dummagan* (community leaders), and Kuna professionals who participate in the CGCK processes. The commission also doubles as the technical arm of the CGCK through comprising the CGCK NGO Instituto de Investigaciones Koskun Kalu. As I noted above, this continues to be in a state of flux due to the recent merger of the two NGOs. It is important to highlight a similarity between the CGK and CGCK structures in the mix of *dule igar* leadership roles and professional support roles.

8.4.3 Nurturing Comarca governance

Governance of Kuna Yala is the process through which self-organisation occurs, producing adaptive responses and endogenous development. The CGK and CGCK contain bodies that are designed to facilitate specific tasks under their mandates. These are the instrumental aspects that di Zerega (2000) calls weakly self-organising. The institutional structures are set up to support collective goals of the Comarca. In both, the highest level of decision making occurs via their general assemblies. General assemblies, using di Zerega's classification, are strongly self-organising. Comarca governance mimics the *onmaked* system of governance found in communities, in which commissions are set up to undertake specific tasks and manage aspects of collective life, with the ultimate goal of supporting collective well-being. Collective well-being is nurtured through *onmaked nega* decision making. The CASs framework sets out the challenge to the social systems as designing institutional structures and governance processes that can both produce goal seeking social behaviour, and simultaneously nurture self-organisation.

In the following section I present findings from network analysis, focusing on functional and structural aspects of networks that support adaptive capacity and self-organisation of Kuna Yala at the Comarca level. Through the analysis, a clearer picture emerges of how institutional and self-organising collective behaviours are managed.

8.5 Comarca Networking

The interactions that I focused on for my analysis of Comarca networking occur through a multitude of different meetings in various geographic locations.

Currently, the offices of the institutional bodies of the CGK and CGCK are located in Panama City, and general assemblies take place in the *onmaked nega* of a host community. I participated in and observed several types of interactions in several physical locations. These included meetings and informal interactions around them in the CGK and CGCK offices in the city, general assemblies in communities, leaders interacting within their own communities, and informal interactions of participants in other physical spaces, such as in the city.

Comarca networks are discussed in the following three sub-sections. First, interactions within and across the CGK and CGCK are discussed, in terms of their ability to support social learning between modules of governance. Second, networks that support self-organisation through general assemblies are discussed both in terms of delegate participation, and in terms of informal and extended interactions with non-delegates. Third, the role of cross-scale interactions in adaptive capacity of the Comarca is discussed. Throughout the sub-sections reference to both functional and structural networks is made.

8.5.1 Linking modules of Comarca governance

The CGK and CGCK institutional structures each deal with different aspects of collective management; the CGK focuses on political and administrative aspects, and the CGCK focuses on cultural and spiritual aspects. If these institutional modules are likened to the committees in communities, then analysis of bridging links between them can inform understanding of how adaptive capacity is fostered.

The most explicit connection between the CGK and CGCK modules is through coordination between the *saila dummagan* and secretaries of each of the two institutions through scheduled coordination meetings and participation in general assemblies. Over the years that I have participated in Kuna Yala I have found that the tightness and effectiveness of these coordinating networks varies. The variation is, in part, related to existing relationships between elected leaders, suggesting that coordination through bridging links is supported as much through informal networks as formal structures. Further, during my time in the field in 2008, the transition phase that the CGCK was going through resulted in even weaker formal linking. Due to my previous work in the Comarca and my established relationships with leaders involved formally and informally with the CGK and CGCK

institutions, I was able to leverage informal networks to support the research approval process. The formal process for reviewing research proposals requires coordination between different institutional bodies of the CGK and CGCK, in order to undertake a multi-disciplinary review. The review of my proposal was undertaken by members of the CGK and CGCK NGOs (who were involved in the formation of the new joint NGO). Through informal interactions between leaders and myself, bridges between the different bodies were built, supporting the review and approval process.

The example from my experience shows that throughout a transition period, informal networks between leaders of each institution played a fundamental role in supporting communication and coordination between the different bodies. While formal coordinating links are designed for effective implementation of tasks, these links are not sufficient. Informal interactions are therefore important for producing bridging links between modules of governance. These informal networks are not designed for a specific purpose, but, are organic in nature.

My experience in working with leaders of the CGK and CGCK illustrates that informal networking is an inherent aspect of being a Kuna leader, whether one lives in the city or in the Comarca. Organic interactions are evident in communities, so when CGK and CGCK leaders find themselves in communities (whether on official missions or simply visiting relatives), they have the opportunity to engage in such interactions. Visiting leaders are often provided the opportunity to speak in *onmaked nega*, further supporting interactions. While in the city there is less opportunity for organic interactions, the re-created Kuna social world (see Chapter 7 for more detail) provides a space for such organic interactions.

Informal networks that form through organic interactions that support bridging links in communities are also important in CGK and CGCK networking. For social learning and adaptive capacity within the CGK and CGCK institutional realms, both structured coordination between the different bodies and informal interactions are important.

8.5.2 Networks supporting self-organisation

The general assemblies of the CGK and CGCK are the collective decision making forums which are important for self-organisation. During the field work I was able

to participate in three assemblies, the ordinary session of the CGK in November 2007 held in Urgandi, the extraordinary session of the CGK on an urgent land encroachment matter held in Nalunega in March 2008, and the ordinary session of the CGCK held in Cardi Mulatupu in May 2008 (shown in photos)

Photo 8.7 A visitor presenting a proposal for an ecotourism project in land bordering Kuna Yala

Photo 8.6 The *saila dummagan* and secretaries presiding over the general assembly meeting

In the past I have participated in seven other general assemblies of the CGK, between 2000 and 2006 and two general assemblies of the CGCK. The assemblies provided opportunity for analysing both formal and informal networking that supports adaptive capacity at the Comarca level. First, I will discuss how communities participate in the general assemblies through delegates, the critical mass of participants engaging in dialogue. Then, I will discuss wider interactions that occur between all participants in assemblies.

Delegate participation in assemblies

General assemblies are held in the *onmaked nega* of the host community, emphasising the self-similar pattern between community and Comarca governance structures. The assemblies of the CGK and CGCK use different formats, in accordance with their goals. The CGK uses spoken meeting format for discussing

political and administrative issues. An average of 200 participants including delegates from the 49 communities, employees of the CGK institutional bodies and all other supporting leaders converge for the assemblies. The assembly is presided over by the three *saila dummagan*, and the Executive Board of the CGK. The CGCK uses chanting as the main vehicle for reflecting on cultural and spiritual development (recently, spoken meetings are used to supplement chanting with analysis for management of certain affairs). The CGCK assemblies are mainly attended by CGCK institutional staff and community leaders.

The 49 communities participate formally in the general assembly through their elected delegates. Each community uses its own locally defined processes for delegate selection. The variation between delegate selection processes produces variation in how communities participate in general assemblies. The variation impacts on how much diversity and redundancy of delegates occurs across the general assemblies and, in turn, affects the Comarca networks functionally and structurally.

In Ukupseni I have witnessed delegate selection several times. Selection occurs during an assembly, at times with more debate than others, depending on the particular interest of the community in the upcoming event. Generally, the elected head *saila* (*saila dummad*) is accompanied by the secretary and two community leaders to the CGK. The leaders who become delegates are chosen partly based on the special interest of the meeting. In the last few years (at least four) one leader has attended most meetings and is now well known as a Comarca level community leader. The delegation sent to the CGCK differs. At least one *saila,* one *argar* and a *sualibed* attend. Often it is not the *saila dummad,* but the most versed chanter, and usually no other leaders accompany them. The selection method for the CGCK delegates is based on a *saila* volunteering to attend since he will have to chant with the most respected Comarca leaders. The *argar* and *sualibed* are selected by the collective. The difference in selection process indicates a difference in how the two assemblies are approached by the community; the CGK is considered to be an important political forum for the community to participate in through their elected political leaders, and the CGCK is viewed as a forum for participation of cultural and spiritual leaders, and learning is transmitted to the community through their practice.

Colebir takes a different approach to participation in general assemblies. Delegate selection for both assemblies is based on leaders volunteering, and the collective ratifying the selection. Leaders illustrate personal preference to participating in the CGK or the CGCK. For example, the *saila dummad*, who has been in office for many years, makes an effort to attend the CGCK, but avoids the CGK. The head *argar*, on the other hand, usually leads the delegation to the CGK, which includes the secretary and other chosen leaders. The head *sualibed* from Colebir is a regular at the CGCK and is emerging as a Comarca leader, taking on roles within the CGCK structures. Colebir's participation in the CGK is inconsistent, and although this is blamed on the communication and transportation challenges they face as an isolated community, my experience in Colebir leads me to believe that this accurately reflects the level of importance awarded the event. The CGCK assembly is recognised as an important event and effort is made to participate in it, leading to Colebir hosting the CGCK for the first time in October 2008.

Functionally, bridging links can be created through participation of delegates in both assemblies, to support social learning and information exchange between different aspects of governance. Analysis of how Ukupseni and Colebir participate in the CGK and CGCK assemblies, through delegate selection and attendance, indicates that participation is differentiated, based on issues and leader expertise. This results in little overlap between leaders in the two general assemblies. Differentiated participation could potentially pose an obstacle to Comarca adaptive capacity, through reducing the information exchange between different aspects of governance.

This challenge is related to the tension identified in communities between a need for specialised leadership to deal with ever increasing interconnections, and their ability to support holistic problem solving (see Chapter 6). Similarly, at the Comarca level, there is increasing pressure to take an issue-driven approach to governance which relates to an increasing embeddedness of Kuna Yala in national and international networks. For example, at the Nalu Nega assembly on land encroachment, several expert presentations were given by CGK commissions and supporting leaders. Some *sailagan* I spoke with during the assembly complained that they were using too much 'foreign' information to make their decisions, and as a result they felt confused and unable to contribute. Increasingly, therefore,

delegates are chosen for their expertise in particular issues that might be discussed, for example tourism development, and less for their knowledge of *Bab Igar* and its principles. This could potentially lead to a decreased ability to govern holistically.

From a structural networking perspective, the lack of diversity in participants in general assemblies leads to a brittle network. Delegates who continuously attend assemblies are necessary as they become hubs which can hold modules together. However, having a limited number of hubs increases the vulnerability of the network. It is beyond the scope of this analysis to make suggestions on the overall level of diversity and redundancy as it would require analysis of delegate selection from a number of communities. However, it would seem that the semi-autonomous nature of delegate selection by 49 communities does provide a certain level of diversity in delegate participation, thus maintaining flexibility in the network.

Interactions during assemblies

The CGK assemblies are the largest gatherings of the Comarca leadership, in terms of community delegates, institutional leaders and support figures. Between sessions and in the evenings the opportunities for people to hold informal meetings in smaller groups and to create links are manifold. The most obvious function of the networks that are the product of the meetings is to influence decision making. I analyse how such links are produced and used through their role in lobbying. This will illustrate functional and structural aspects of networking practice during assemblies.

An example of a lobbying activity occurred in the Urgandi session (November, 2007) while regulating the management and use of the newly paved road into the Comarca. Several groups of transport providers were competing for a leading role that would secure their business interests. One of the groups was comprised of all Kuna members, some drivers, others owners of vehicles and investors. Another group was led by a non-Kuna and was comprised of mixed membership of Kuna and non-Kuna participants. Both groups had connections into the Comarca. The first group, however, had the advantage of being connected into many different clusters of leaders present at the meeting, and during the general assembly they managed to recruit highly connected individuals to strengthen their position. During the evenings the two groups discussed their proposal with the community representatives they had access to through already existing links.

Communities that are most directly influenced by how the road is managed are those located in the western communities of the Cardi area. Some communities in the area operate their own transportation stations where passengers land and are charged tax. Communities compete for access to potential tourist business and use of their stations. The informal meetings were both an opportunity for lobbying by the transporters for delegate support and an opportunity for delegates to negotiate use of their transportation stations. There was an intense and urgent feeling of political lobbying, and the most networked group had a clear advantage. While they did not win the battle, as the assembly decided to set up an *ad hoc* commission to investigate the matter further, which led to a process for acquiring permission to provide transportation services, in April 2010 the most networked group had a larger share of the transport market. These lobbying processes are similar to those observed during community decision making processes, but are more intense as most lobbyists do not have easy access to community delegates outside of the general assembly meetings, and cannot solely count on relationships of trust.

Functionally, networks that arise out of formal and informal linking of assembly participants create vehicles for social learning that ensure multiple view points and a wealth of information permeated into the decision making arena. For adaptive capacity this is positive, as diversity of ideas is an important resource, increasing the potential of adaptive success. Structurally, however, the networks also illustrate vulnerabilities in the form of hubs, which are delegates who may be manipulated by lobbyists. While the networks are supporting information exchange, they can also become vehicles for coercion.

The vulnerability of networks that facilitate lobbying and impact on decision making is controlled in several ways. The ultimate decision making power lies in the assembly and the community delegates who exercise the voting right for each community. The autonomous community process used for selecting delegates means that external lobbyists have no control over who will be making decision for communities. This limits their lobbying power to what can be accomplished during the assembly period and, as there is not time to make new connections, already established networks of trust must be used to access delegates. In the case of some communities, such as Ukupseni, where there is repetitive participation of leaders, these delegates become more likely to be influenced by informal lobbying through creating strong relationships of trust. They become targets. The modular structure,

with clusters of leaders, also provides some defence, making it difficult for a minority opinion to spread across the entire network.

As was discussed in the previous section, delegate selection being a community process is important for structural robustness. On the other hand, the wealth of interactions that occur around assemblies with a wide group of participants functionally supports bridging links for social learning and adaptive capacity. These findings suggest that at the Comarca level both formal and informal networking practice are important in finding a delicate balance between flexibility of networks which necessarily creates some vulnerability, and multiple interconnections supporting adaptive capacity. The balance between instrumental structures and self-organisation is, in part, managed through the combination of networking practices, both organic and structured.

8.5.3 Cross-scale links within the Comarca

In the previous sections, the interactions between leaders within the whole Comarca system were discussed. Now, I turn to what is an inherent aspect of Comarca networks, their cross-scale nature. Participants in general assemblies and the CGK and CGCK are all members (and usually leaders) of their own communities. Interactions between leaders necessarily produce community-Comarca links, and community delegate participation in general assemblies create formal community- Comarca links. I extend the example of lobbying interactions used above to discuss community-Comarca links. I use an example of interactions around a specific issue that occurred during my time in the field, to illustrate the nature of cross-scale interactions and how they impact on functional and structural networking.

In 2008, lobbying over a government proposal for a project to connect electrical supply from Colombia with demand in Panama and further afield, as part of the Plan Puebla-Panama funded by the Inter American Bank was taking place. The proposed route for the electrical connection required that cables pass through the Comarca. The government needed the approval of Kuna Yala to proceed with the project. The project was contentious and the debate surrounding it multi-dimensional. Only a few communities in the eastern part of the Comarca would be directly impacted by the cable on their land. Some leaders argued that these

communities should be allowed to decide whether to approve the project, and in the case of receiving compensation they should not be required to share it with the rest of the Comarca. Conversely, some argued that the project should not be approved, and based their opinion on the past experience of the Kuna of Madungandi when the Bayano river was damned for production of hydroelectric power, flooding their land and resulting in relocation. The agreement between the Madungandi Kuna and the government owned power plant was not honoured and little compensation or benefit was received. Lobbying occurred for several months on the project resulting in a rejection of the government proposal by the Kuna.

During lobbying around this issue, the Governor of Kuna Yala visited communities and took advantage of the opportunity to speak in *onmaked nega* that is always offered visiting political leaders, to build support for the proposed government initiative. On the other side of the argument, Kuna NGOs built a campaign against the project, and several members visited communities and spoke in *onmaked nega* about the possible negative consequences. The final decision regarding the project was made in a CGK general assembly.

The example illustrates that community-Comarca links made through delegate participation in general assemblies, are supplemented by mediated linking around particular issues. Leaders create links by directly communicating ideas and information to communities. While this may be useful for lobbying, and creates vulnerability through potential manipulation or coercion, it promotes information flow. During general assemblies, information can also flow from the communities to the Comarca. There is, therefore, potential for two way information flow through this extended network of cross-scale links. For adaptive capacity this is significant. CASs are made up of many embedded spheres, and having a multitude of cross-scale links between them facilitates structural resilience and supports adaptive capacity.

In summary, this section has focused on networking practice at, and within the Comarca level through formal and informal interactions. One of the key findings is that informal networking supports and, at times stands in for institutional coordination between the CGK and CGCK bodies. Bridging links that support adaptive capacity are therefore both formally and informally produced. A functional approach illustrates that bridging and linking networks occur within the Comarca due to the embeddedness of participants in larger social networks in

communities and beyond. This is particularly important in terms of linking networks, as individuals who participate at the Comarca level are necessarily members of communities. The embeddness of Comarca levels is therefore an important promoter of adaptive capacity. A structural approach has shown that there is an increasing tendency for differentiated participation in general assemblies, which can potentially undermine robustness of the Comarca network.

8.6 Linking from the Comarca into a Globalised World

In this final section of the chapter, the focus turns to how the Kuna manage links between levels of Kuna Yala and the external environment, and the current challenges that globalisation and increased interconnections brings. The work of Martinez Mauri (2007) is of particular relevance to this section. Her analysis of the role of the *sikwimala* in transformations in Kuna Yala begins with a historical overview of the emergence of the need for translators from the beginning of the 20th century (Martinez Mauri, 2007, pp. 294-345). Next, she argues that in the 1970s and 1980s a new type of *sikwi* emerged; the founders of NGOs who engaged in capturing international development funds. The border between the local and international spheres is manipulated by these emergent *sikwimala* (Martinez Mauri, 2007, pp. 346-387). Finally, she shows that in recent years, the mediation of *sikwimala* engaged in international processes have manipulated the territorial demands of the Kuna by appropriating the international discourse of indigenous peoples and territory, all the while forgetting the importance of the marine environment to the Kuna (Martinez Mauri, 2007, pp. 388-444). In effect, she argues that the *sikwimala* who partake in cross-scale linking have not been able to bring the local perspective and needs to the global sphere.

I will add to this analysis, through using a CASs perspective to understand networks that link different levels of the Comarca, with the external environment. I begin through discussing the links between communities in Kuna Yala, the Comarca and beyond. Then, I discuss how Kuna adaptive capacity, supported through cross-scale links, is impacted by the current globalised context.

8.6.1 Linking beyond communities

Communities in Kuna Yala are increasingly becoming connected to the world outside. Individuals from communities are now directly linked into national and global scales. As the opportunities for western education increase, the number of Kuna being educated in the city on the rise, and new scholarship opportunities to study abroad brokered by the CGK, there is an increasing number of professional Kuna. In Chapter 6 the role of 'professional' and 'intellectual' leaders in communities was discussed, indicating that they contribute to adaptive capacity through bringing specialised information or knowledge into the collective. There are several ways such leaders form cross-scale links to facilitate information flows.

First, leaders produce cross-scale links through their formal positions. For example, in Ukupseni there are two regional level government institutional offices (Ministry of Education and Environmental Authority) and the employees of these offices are professional Kuna. These highly connected individuals have access to outside networks through their institutions and other professional networks and can play a role in linking between the community and national level processes. A greater awareness of national processes can help inform community decisions in times when interconnections are vitally important to understand.

The second way professional leaders participate in cross-scale links is in the form of NGO managed projects. One example is the project managed by Balu Wala on marine resource management. At the time of the field work, the president of Balu Wala was also the leader of the *Mor Ginnit* group in Ukupseni, connecting the NGO world to community groups. One of the objectives of the project was to foster epistemological bridges between the *dule igar* marine resource management system and biologists. While I cannot comment on the level of substantive success of the project in improving resource management, I can attest to its fostering epistemological bridge building through activities and, in some cases, this has led to creation of protected marine areas using a mix of Kuna and scientific conservation measures. In Ukupseni, the Mir Galu protected area was created, although at the time of the field work its management was still a contested issue in the community.

Colebir has fewer opportunities for direct cross-scale links with the Comarca and beyond. There are only three teachers working in the community, and as their

mandate is locally focused they do not provide opportunity for cross-scale linking. The first experience with an NGO managed project in Colebir was in 2003. The project was funded through the International Rotary Club with technical support from the Panamanian Ministry of Agriculture. The opportunity arose from agricultural leaders from Colebir participating in regional agricultural workshops. The project was accepted in the community after much debate concerning possible negative impacts such as making agricultural work, which has always been their livelihood, into an activity that is supported through external funding. The results of the project have been mixed, both in terms of impacting livelihoods and potential future opportunities. One of the outcomes of the original project was the establishment of a community NGO, which has created the potential for access to external funds and cross-scale links. However, accessing such funds has proved challenging partly because of the lack of connections into development networks. This is a case of needing to be connected in the first place, in order to make the connections useful.

Cross-scale links that connect people grounded within communities to outside processes are important for obtaining access to information and resources, and can support adaptive capacity through increasing opportunity for epistemological bridge building and building awareness of external threats and pressures. Ukupseni has more experience in this area, yet struggles at times to ensure that the links are used to further local adaptive goals rather than to implement top-down externally driven processes. Colebir has fewer links with outside processes and, at a time when there is increasing connection between communities and global processes, this can be a weakness through limited information sharing and greater threat of manipulation by outsiders. It also, however, can constitute a strength, by ensuring focus on local goals and supporting local processes. During the time I was conducting field work I was asked to support Colebir through making connections with Comarca level leaders and government and international institutions that could support their goals. This shows that there is a conscious effort to make connections into national and international spheres. Leaders told me that with the world being so interconnected, and based on information, they realised it is important to have good connections to support local goals.

8.6.2 Linking beyond the Comarca

Comarca – State links

Another level of cross-scale linking exists between the Comarca and the Panamanian State. This occurs both formally, through election legislators representing Kuna Yala in the Panamanian Congress (two from Kuna Yala), and other local government representatives, and through the direct relationship of the CGK with the State. At times, these two systems work together to both protect the Comarca from government threats and to pressure the government on issues of concern. The Kuna are particularly successful at using their cross-scale networks to influence national level policy in favour of indigenous rights.

A recent example where the CGK and formally elected representatives to central government worked together to protect the self-determination of Kuna Yala was action taken to influence the passing of national legislation in 2008 regarding indigenous land rights. The proposed law 411 would create new forms of collective land rights for other indigenous groups that do not have legalised territory, such as some Embera and Wounaan living outside of their Comarca, and has been in discussion for many years. The drafted law that was about to enter the second level debate in parliament proposed a change of governance structures for all indigenous territories, and would reduce the current recognised Comarca governance structures to a more restricted form of indigenous collective territorial governance under the national political system. The law presented a threat to Comarca sovereignty.

A Kuna legislator became aware of the potential threat to the Comarca regime before the law was brought into parliamentary debate. During a CGCK meeting he presented his interpretation of how the Comarca would be affected (as an opposition legislator he also personally gained from illustrating the intentions of the party in power as unsupportive of indigenous sovereignty). Jointly, the CGK and CGCK were able to stop the progress of the law by requesting further consultation with all indigenous peoples in Panama that stood to be affected by the law change. The end result was an extended period of consultation and the redrafting of the law so as to not impact upon Comarca governance.

Success for the Kuna, in this case, was dependent upon the connections between their representatives in parliament, the Comarca and communities. Kuna

legislators are able to participate actively in Comarca governance by becoming advisors with the right to speak in general assemblies and participate in *ad hoc* commissions. Cross-scale networks are deliberately strengthened through leveraging politicians within the Comarca system. In my time in Kuna Yala, I have seen this work in favour of the Kuna and other indigenous peoples with at least several representatives. It is equally true that some elected representatives do not participate in the Comarca, while others have negatively impacted local governance. Legislators and all formally elected politicians therefore are potential hubs, who can be pivotal in strengthening cross-scale links, or, conversely, can become points of vulnerability.

Comarca – Global links

Increasingly, links between the Comarca and international processes and networks are influencing Comarca governance. The majority of Kuna participation in international spheres occurs through the multitude of *sikwimala*, who participate, at times as representatives of formal governance structures, and at others through their own networks. Professional expert leaders are explicitly part of CGK and CGCK structures. The CGK includes a body of professional advisors, while in the CGCK, professional leaders form part of the specialised commission. These experts are chosen both because they are knowledgeable in a certain field of study, but also because of their participation in Comarca level processes. They are generally involved in professional careers of their own, building their expertise in their field, and support Comarca governance through a flexible arrangement. They are called on for support when expertise is required, but have no power within the decision making process. They are well situated to provide the necessary links between epistemologies and scales because they have one foot in the Comarca system and one outside of it.

Kuna NGO members participate in international processes. They participate through a network of their own, which is based on their involvement with international indigenous movements and is issue-focused (indigenous rights and policy, biodiversity conservation, climate change, etc.). While some of these leaders are formally recognised by the CGK through their accredited organisations, and they participate in general assemblies and work in communities, their participation in global processes is not directly related to their participation in local

processes. The international development rhetoric argues that indigenous global leaders are local representatives, but this is not always the case in practice. In the Kuna context, being rooted in the local and respected as a leader involves commitment to local processes which are managed in communities, in Kuna Yala, and requires extended time and resources. Being successful in a global context requires continued participation in international meetings and expertise gained through formal study and professional application. It is almost impossible to meet the demands of both local and global leadership in the case of the Kuna.

Most leaders who are in a position to create links between the global and the local are successful globally, as it is through their global success that they may access funds to participate in international arenas. To a large extent, therefore, top-down development resource flow selects cross-scale linkers from a number of potential leaders. In this context of global success, it is not surprising, that Kuna global leaders struggle to bring the local to the global (Martinez Mauri, 2007); they are much better suited to the opposite. Cross-scale networks channel funds, and development projects they fund can have positive or negative impacts on local spheres. But in a globalised and complex world, being connected is no longer an option, but rather, it is an inevitable reality. For adaptive capacity, the existing cross-scale links must be mediated in order to ensure support for endogenous development.

Recent conflict regarding Kuna participation in international fora illustrates the complexity of the matter. An example is the dispute between Kuna NGO leaders and CGK leaders regarding their position on the United Nations collaborative program for Reducing Emissions from Deforestation and Forest Degradation (REDD). There is an international debate regarding how REDD affects the rights of indigenous peoples, with no unified indigenous position. Many indigenous leaders, including some Kuna NGO leaders, argue that the program will be detrimental to indigenous peoples and they should not participate, while others, including other Kuna NGO leaders, argue it is important to participate in the process. A rumour concerning interaction between an official CGK delegation at an international meeting and supporters of the REDD scheme produced conflict within the Comarca.

On one level the conflict points to a difference of opinion between Kuna leaders on a global issue, which may or may not impact upon Kuna Yala. On closer

245

inspection, the conflict is related to issues of Kuna accountability in the international sphere. The increased participation of a diversity of Kuna leaders at international fora has led to a plethora of Kuna voices, and it is not always clear which voice (if any) is the 'collective voice' of the Kuna. Official CGK delegations are accountable to the collective, and are only able to voice an opinion on contentious matters if they have been discussed in an assembly, because they literally translate collective views (Martinez Mauri, 2007). NGO leaders, on the other hand, participate of their own accord, and are not directly accountable to the collective. While they may not be accountable, NGO leaders are subordinate to the collective locally. Formal sanctions are at times issued to leaders by the CGK assembly due to them acting against collective well-being in their international capacities.

I spoke with several leaders of the CGK about accountability of global Kuna leaders and whether there should be a system to control their actions. An interesting view was voiced by one leader. He argued tha it is impossible to control international actions. This, he continued, is not necessarily a problem, since internationally active Kuna leaders who do not participate locally are irrelevant to local well-being. When they participate locally they then become relevant. From his local perspective, it is locally relevant leaders who need to be held accountable, and this is possible through local measures of accountability. If they want to participate locally, then they must act for collective well-being in all their endeavours. Leaders who are not interested in local consequences and therefore do not participate locally are free to act as they wish internationally, as it then becomes a personal and not a collective matter. Leaders who form part of the support structures of the CGK, however, are necessarily accountable to the collective, and are expected to support collective well-being.

From a complexity view of cross-scale interactions, this leader's opinion makes a lot of sense. The concept of emergence illustrates that each level of a CAS is an emergent phenomenon. A group within a community, a community, the Comarca, and international indigenous networks are all levels of collectivity that are part of a CAS. Each of the levels is undergoing a process of self-organisation through which endogenous development emerges. Endogenous development operates through local interactions creating emergent patterns within a scale of collectivity. In other words, Kuna Yala develops through the interactions between elements of the

246

Comarca. While some of these elements within the Comarca, such as leaders, are also interacting at different levels, they can only influence endogenous development through interacting at the relevant level. Furthermore, they are but one aspect of the local interactions that include a multitude of processes and actors.

The social networks that link across scales of Kuna Yala and beyond are manifold. CGK leaders operate at the Comarca level and connect to other levels such as national processes. Their goal (as collective leaders) is to use the interactions to improve local development, based on local identity and goals. They might also be contributing to national level processes of indigenous policy development, but this is not their main focus, nor is it their mandate. In the case of NGO leaders, they can either be working locally and connected into the global or working globally and connected into the local. Both approaches are part of managing complexity, and both are necessary. The challenge is to be aware of which role is necessary at different times, *to ensure that global forces* (through discourse, resources, information) *are not determining local development*.

8.7 Conclusion

This chapter has presented findings from analysis of Kuna networking practice. The main focus has been on bridging and linking ties that are of particular interest to adaptive capacity in CASs because they foster self-organisation within groups and levels of collectivity. Networks support interactions between the parts, and they allow integration across the embedded levels that make up a CAS. Adding to the community analysis presented in Chapters 6 and 7, the first part of the chapter discussed community bridging links. The findings suggest that organic community interactions form networks that are functionally able to support adaptive capacity, and structurally provide resilience. Adaptive capacity of Kuna communities is therefore best though of as nurtured through a web of social networks that support the *onmaked nega* dialogical processes.

The rest of the chapter has focused on networks at the Comarca level and beyond. The findings are pertinent to understanding how management of instrumental social organisations, such as the CGK and CGCK institutions, is balanced with nurturing self-organisation. In a way that is similar to the community analysis, what emerged was an appreciation of the role of informal networking practices. Informal networking has been shown to be important for supporting

social learning and adaptive capacity within institutions (Pelling et al., 2008). The nature of institutional structures as goal-seeking proves a barrier to supporting learning across modules. Some argue that since self-organisation is the means for adaptation, it cannot be institutionally built, but rather must be the product of an organic process (Uhl-Bien et al., 2007), involving spontaneous emergence and directed emergence. At the collective level of Kuna Yala, the organic process for self-organisation occurs through a web of interactions that support the general assemblies. General assemblies support dialogical interactions between agents. However, the quantity of interacting agents and information on a multitude of issues with which the Comarca engages, make dialogue through the limited general assemblies (twice a year) insufficient for governance. Dialogue must be facilitated through institutional arrangements beyond the general assemblies. This is where informal interactions between leaders engaged in the CGK and CGCK are important for adaptive capacity.

The second contribution of the findings is related to tensions arising from the division between the functions of the CGK as administrative and political and CGCK as spiritual and cultural. There are two significant implications of the division of functions. First, their institutional structures, and therefore their management of issues, are almost entirely separate, and connections between them are weak. For holistic governance this is problematic. The CGK was historically created as a means to collectively organise and respond to external threats and pressures, it was an emergent collective adaptation, and as such was created by the organic processes of interacting communities. The CGCK was created in response to the inability of the CGK to support internal strengthening of the Comarca. It would seem that its institutional development continues, with some major restructuring taking place in the last few years. Even with its ambiguous structure, the CGCK was an emergent adaptation, nurturing the self-organising processes of Kuna Yala. It is ironic therefore, that the creation of two institutional structures now poses a challenge to the ability of the Kuna to govern holistically. This could be thought of as a case of adaptive management that has not brought the desired results, and a transformation of the system is required to regain the capacity for holistic governance.

The second implication is related to the trend in differentiated and issue driven leadership creating vulnerabilities in the system. This was discussed as a challenge

to holistic governance in Chapter 6. Network analysis has shown that the trend of more differentiated and issues-based participation could jeopardise organic networking process which support self-organisation. As leaders are hubs, they are also points of vulnerability in the system; if there are few hubs in the whole network it becomes more vulnerable. This was shown through the examples of lobbying processes. In the current interconnected context of Kuna Yala, these hubs become exposed to direct attacks by external agents that could potentially undermine the integrity of the system and influence endogenous development decisions. Having the right amount of leaders in the network is important for maintaining the right balance of robustness and resilience. It is likely that as Kuna Yala deals with greater interconnection, and leaders become more exposed, that the way leaders are chosen and manage could have to shift. This will require an adaptation that can deal with the new environment of globalisation.

The remainder of the chapter focused on networking practice that links across-scales. This is a fundamental aspect of the CASs framework used. The current context of globalisation is characterised by increased interconnectedness of scales and the speeding up of interactions and processes (Young et al., 2006). Time and space compression (Robertson, 1995) is a consequence that connects the local to the global more directly than ever before. New cross-scale links are forming between communities and international spheres, and examples of NGO mediated links illustrates the opportunities and challenges of adequately linking to support local development. Similarly, analysis of the role of *sikwimala*, built on the work of Martinez Mauri (2007) to show that for adaptive capacity in the current age of complexity it is necessary to be aware of multiple forms of cross-scale links and leverage them accordingly. The focus on endogenous development leads to the conclusion that connectors are but one element in the process of self-organisation, and as long as they remain subordinate to local decision making, the threat that top-down development power relations pose to the Kuna can be contained, while information flow is supported. Protecting the local process is fundamental to the ability of the Kuna to adapt, but in a globalised interconnected world, this is a serious challenge. The implications of these findings to the Kuna and other indigenous peoples facing similar threats are discussed further in Chapter 10.

As I noted at the beginning of this chapter, I have analysed Kuna social networking practice through understanding practices embedded in a social reality,

and therefore did not produce social network models. However, our ability to model complex networks improves, so after this initial exploration of networking practice for adaptation and endogenous development, undertaking formal social network analysis in Kuna Yala could prove to be a fruitful avenue for complementary future research into this key area.

Chapter 9

Holistic Understanding of Kuna Adaptive Capacity

If development is to relate to the whole of human existence, analyses, planning and development strategies will have to take into account transcendence - that depth of freedom, infinity and interconnectedness, which is inherent to all human beings. Such an understanding requires a sense of mystery which enlightens from within, so as to open up our minds to an approach which does not separate the spiritual from the material. This is not to become irrational, but to become conscious of the unknown, which some religions see as the divine within. (WFDD, 2001, pp. 7-8)

9.1 Introduction

The main objective of this research was to contribute to reframing of development through use of complexity theory. To this end, analysis of Kuna Yala has been guided by a CASs analytical framework. A CAS was defined as an open, living system made up of many parts that interact in non-linear ways and are far from equilibrium, adapting and oscillating between different states with patterns and order emerging out of dynamic system interactions producing self-organisation. Kuna Yala was described as an IBCS, the product of an ongoing historical co-evolutionary relationship between the Kuna and the ecosystems they inhabit. In other words, a CASs analytical framework was used to understand a particular type of CAS, an IBCS. Adaptive capacity was chosen as a focus of inquiry into endogenous development because of its central role in self-organisation.

In this chapter I combine the threads of the thesis to build holistic understanding of adaptation and endogenous development of Kuna Yala. Developing holistic understanding is pivotal to effectiveness of the CASs approach. Holistic insights emerged through analysing all of the parts, or threads, so that the thesis may indeed become more than the sum of its parts. While previous chapters have examined particular aspects of Kuna practice and how they support adaptive capacity, self-organisation and governance, the focus here is on how they combine to contribute to endogenous development. That is, adaptive capacity and self-organisation are not necessarily guaranteed by the presence of particular adaptive processes or practices. More importantly, it is how such processes and practices mesh together

within the overall system that determines its ability to foster endogenous development.

The contributions of the thesis are discussed through three sections. First, I present insights that emerged from reflecting upon all of the findings regarding Kuna practice, building a holistic understanding of adaptive capacity. I offer a model of Kuna adaptive capacity to guide the discussion. Further, the discussion speaks to the interest, implicitly part of my objectives, to explore the processes that bring about transformative changes that require 'deep learning'. A key contribution of the thesis is presented through distinguishing between two levels of adaptive change - adaptive management and transformative change – arguing that ritual practice is central to transformative capacity.

In the second part of the chapter I discuss insights gained regarding the collective processes which foster adaptation and self-organisation of collectives. Through the discussion I show how understanding of Kuna collective governance helps build upon models of governance understood through complexity. Kuna governance offers suggestions on how to support key aspects of collective governance that can engage with the challenges of the current age of heightened complexity.

In the final section I discuss two key lessons that emerged from my use of a CASs framework as they relate to fields concerned with both theoretical and practical understanding of adaptive capacity in linked socio-cultural and bio-physical systems.

9.2 Kuna Adaptive Capacity

A process of facilitated reflection has guided inquiry and learning throughout the research. In Chapter 5 I described the process undertaken with the 'reflection group'. Several moments of conceptual development were presented in the form of mind maps that emerged during the process. From this collective learning, several themes of Kuna practices were identified as important and parallel inquiry was undertaken into the practices through in-depth qualitative analysis during the field work. The reflexive learning of the thesis has continued beyond the field work stage, and for the synthesis presented in this chapter, all of the findings have contributed to a final iteration of reflection to provide a holistic view of Kuna

adaptive capacity. In April 2010 I was able to hold a final workshop with the reflection group in Panama, during which the model presented in Figure 11 was discussed and validated. It is presented here as a contribution to theories of collective adaptation.

### 9.2.1 A holistic view of Kuna adaptive capacity

Adaptive capacity was analysed as an emergent property of interactions between parts of collectives that make up Kuna Yala. As an emergent property of a CAS, it was inquired into through focusing on the interactions between system components or elements such as leaders, community members, management structures and rituals. This inquiry led to identifying key factors that produce conditions that support emergent adaptations. Adaptations are the manifestation of adaptive capacity, in the form of visible changes in the system (Smit & Wandel, 2006). Adaptations are therefore the result of processes and factors that make up the adaptive capacity of a collective.

While adaptation is emergent and often cannot be anticipated or planned, analysis of practices led to a visualisation of a set of steps within collective life that seem to be necessary for facilitating adaptive changes. For example, in communities, there are certain key steps (daily meetings in *onmaked nega* for dialogue and decision making or ritual practices, for example) that when viewed together create an ongoing process of interactions through which adaptations emerge, and self-organisation is facilitated. Figure 11 illustrates how the ongoing process can lead to two types of change; adaptive management and transformative change. First, I provide an explanation of the model, discussing key elements. In Section 9.3, Kuna governance, in which the processes are embedded, is discussed further.

Figure 11 illustrates a cyclical process that is part of collective governance, and facilitates both adaptive management and transformative change in collectives. The process shown is generic across scales of collectivity - communities and the Comarca - using appropriate methods for the particular context of each level. In the boxes, the following steps of the cyclical process are shown: collective monitoring, rituals, collective dialogue and collective action. The circles in the figure represent factors that support each step of the process. Two levels of adaptive changes are shown in the model - adaptive management and

transformative change. Adaptive management is an ongoing process facilitated through collective governance. Transformative change is engaged in during moments of crisis, or when adaptive management is unable to promote well-being. For the sake of clarity, I begin explanation of the cycle shown in the model at collective monitoring, although the process is ongoing so there is no real starting point.

Figure 11 Collective processes that facilitate adaptation and transformation
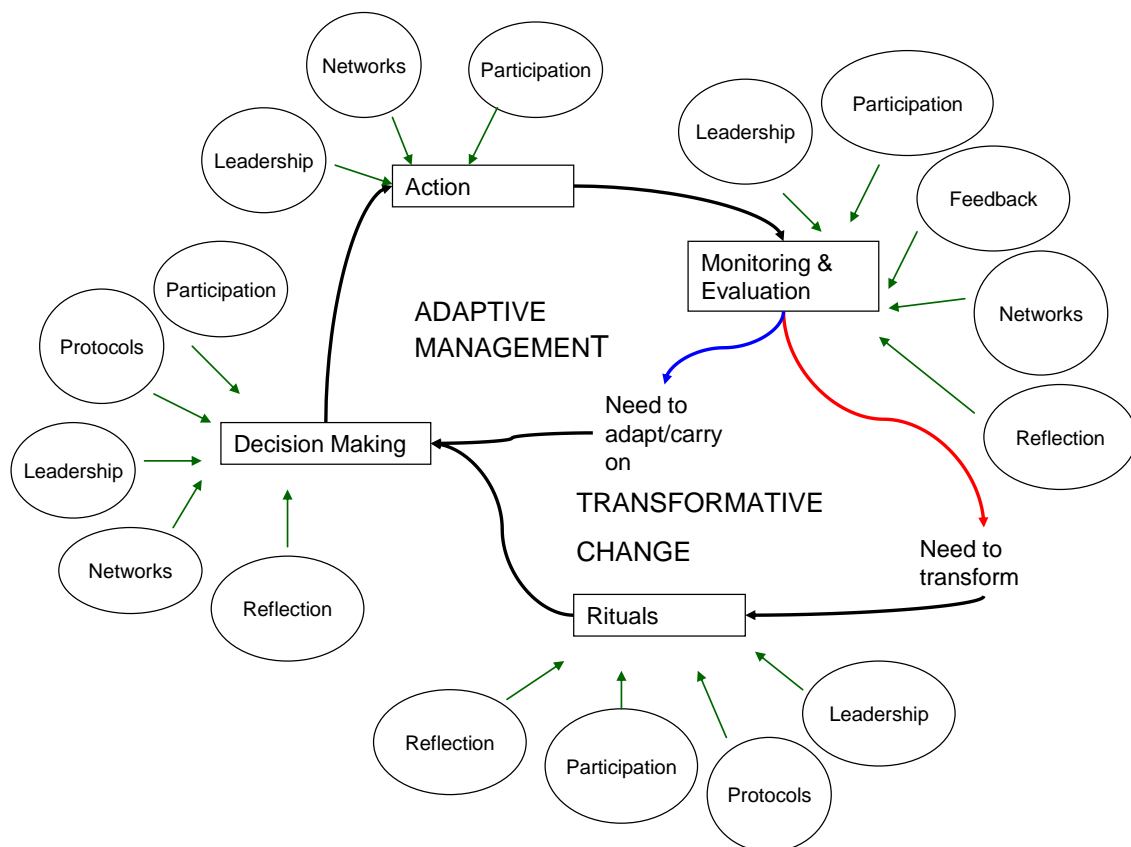
Monitoring and evaluation is the step that captures and analyses information regarding the state of the system. There are several steps within this one step, and it is an ongoing collective process, through reflection on the information (feedback) received, analysis and dialogue. Monitoring and evaluation may lead to three options: (i) to carry on with no changes, (ii) to facilitate adaptation or, (iii) to transform. The blue arrow indicates movement directly to an adaptive management cycle, which is used both to facilitate adaptation and to carry on with no specific changes. Adaptive management requires decision making which occurs through dialogue of reflexive participants leading to collective action. When the monitoring

process picks up information that alerts the collective to the need for transformative change in the system, or when no other option seems possible, then a process of transformative change is entered. Rituals are necessary for transformation. In the most severe cases, a *war ue*t ritual is engaged in. But even when this does not occur, ongoing ritual practice such as the coming of age ceremonies of young girls and healing rituals build skills in individuals who will partake in the step of transformation (hence rituals are illustrated as important for the transformative change cycle). The cycle then continues through the adaptive management cycle to make necessary decisions and changes.

An important aspect is that reflection is part of all of the steps. It is engaged in and facilitated by protocols used for dialogue in collective processes, and by the skills of persons participating. However, when transformation is required, a deeper level of reflection is engaged in, and rituals are an important aspect of facilitating the process in individuals and the collective as a whole.

A further point concerns how decisions are made to adapt, transform or not change. The 'decision' is not necessarily a conscious and planned decision. The findings suggest that at times it is, for example when *war uet* is engaged in, but at others it could simply emerge from the combination of all collective processes. While in the model monitoring and evaluation is shown to lead into a particular decision, this is shown for clarity, to distinguish that there are different options. I am not suggesting that adaptation and transformation are always engaged in consciously. This is one of the key points of the CASs framework; in human systems, self-organisation is the sum of both organic (unconscious) and deliberate interactions. The key to sustaining endogenous development, as I argued in Chapter 2, is to nurture self-organisation through providing a delicate balance between both organic and deliberate interactions. The collective processes shown in Figure 11, therefore, must be able to maintain this balance.

9.2.2 Facilitating adaptation and transformation

I focus my discussion of the contributions of the model around two key aspects that create enabling conditions for adaptation and transformation: (i) collective processes (monitoring, reflection, decision making and action) are embedded in relational spaces and, (ii) two levels of change create adaptive and transformative

potential. Each of these aspects is now examined further to provide an appreciation for Kuna adaptive capacity as a holistic process. In Chapter 10 I discuss some implications of these findings for the Kuna and other key stakeholders.

(i) Collective processes: formal events and relational spaces

Four collective processes provide the scaffolding on which cycles of governance are performed, producing adaptive and transformative responses - monitoring, rituals, decision making and action. These processes are more than just a set of connected collective events, as each process is also a space for collective engagement. Collective events, however, are critical moments within them, and many were found to be important for adaptive capacity in communities and the Comarca. These events may be formal, informal, planned and spontaneous. Formal events are used in community management, such as meetings held in *onmaked nega* regarding specific aspects of community life, or the general assemblies for the Comarca. They are planned events during which analysis, dialogue and decision making are facilitated. Many informal events such as those engaged in by interest groups, for example *Mor Ginnit* in Ukupseni (see Section 8.3.2), are part of the multitude of interactions that make up Kuna networks that foster self-organisation. Similarly, informal meetings between leaders of the CGK were shown to be important both for supporting instrumental roles and for supporting social learning and adaptive capacity.

Analysis of Kuna networking practice, presented in Chapter 8, has shown that a multitude of interactions contribute to enabling conditions. In Chapter 7 I described the Kuna socio-cultural world as a highly collective endeavour. Similarly, in Chapter 6 I discussed the meshing of instrumental and self-organising behaviours of leaders and governance processes in communities, to show that behind formal events is a pandemonium of interactions that support adaptive capacity. Take collective monitoring as an example. It is made up of both formal and informal aspects of community life. In communities, specialist committees are part of the formal organisation of community management and it is part of their mandate to feed information regarding their specific area of community management back to the collective. The health committee of Ukupseni, for example, reports back on the overall health of the community, through its liaison with the health centre and other community groups such as the parents club at the school that might have relevant

information. Formal structures provide 'expert' information – this is mimicked at the Comarca level through using Kuna professionals in commissions, such as lawyers in the CGK commissions on policy formulation – but this is only one form of expertise that is used. For example, ritual specialists, such as *nelegan* perform an important monitoring function in communities. Their role is to engage with the spirit world in order to identify spiritual imbalances which manifest in social and physical imbalances in the community. In the past it might have been more formalised, but today it continues in a more spontaneous manner. At the Comarca level, similarly, commissions engage in information gathering and liaise informally with groups that contribute to their understanding of the state of the Comarca system. The collective and participatory nature of the *onmaked* processes and social networks produce spaces for collective engagement out of which adaptation and self-organisation emerges.

These findings coincide with the notion of relational or shadow spaces that have recently been used to describe networks that cut across formal organisational spheres to foster adaptive capacity to climate change (Pelling et al., 2008). The concept builds on the theory of communities of practice, developed by Wenger (1999), as structures within organisations that are not formally recognised, hence their name 'shadow spaces'. Their informal nature, combined with a common group identity that is based around a practice, makes them ideal vehicles for social learning (Scheffer et al., 2002), which is a key process for adaptive management (Gunderson et al., 1995; Lee, 1993; Pahl - Wostl, 2006). Further, these spaces support 'latent social capacities' (Pelling & High, 2005) which are useful for long term adaptive capacity.

The Kuna adaptive capacity model is therefore best viewed as made up of collective processes such as monitoring and decision making that are embedded within relational spaces that nurture adaptation and self-organisation. Specifically, Kuna bridging network practice has been discussed in Chapter 8, showing that linking between different interest groups or communities of practice within collectives is common. This overlap between formal and informal processes is easily visualised at the community level, illustrated through the tight social nature of Kuna collectives. The organic nature of interactions in Kuna communities appears to produce social networks that form relational spaces. At the Comarca level, however, relational spaces must be created across communities of practice on

multiple levels. Unlike community governance, Comarca governance tends to be viewed only as a formal process. The CGK and CGCK and their associated bodies are institutional structures, and they support formal relationships and connections between Kuna communities and the Comarca, and the Comarca and its environment. As I argued in Chapter 8, informal interactions occur in the form of bridging networks across modules within the Comarca system, as well as across the scales of the system; from communities to the Comarca, and from the Comarca to the external environment of the national and international spheres. These findings relate to one of the key challenges of the CASs approach - finding ways to nurture direct emergence through strongly self-organising social processes while simultaneously influencing indirect emergence through instrumental social institutions. The key to this balance lies in an awareness of the role of social networks for both instrumental and self-organising behaviours. Lessons from this understanding are further elaborated on in Chapter 10 on leverage points for Kuna practice.

(ii) Adaptation and transformation as levels of change

The second important aspect of the model of Kuna adaptive capacity that emerged is the identification of two levels of adaptive processes that are occurring simultaneously in Kuna collectives. They differ in the level of crisis they respond to and the degree of change they produce in the system. In the model, the two processes are called adaptive management and transformative change. As I have already noted, the decision to engage in one or the other is the result of ongoing system monitoring and evaluation, which occurs through both formal and informal processes embedded in relational spaces.

The degree of change that an adaptive response produces in the system has been used in classifying adaptations in the climate change literature (Smit et al., 2000; Smit & Wandel, 2006). Pelling and High (2005) argue, further, that a useful categorisation of adaptations differentiates adaptations that protect operating or management systems from adaptations that safeguard the core functions of the system itself. The first type are adaptations that simply adjust practice and maintain current management systems, while the second type challenges the status quo of the management system to transform into a new system. This distinction seems to

fit loosely with the types of changes visualised through Kuna adaptation and transformation.

Different forms of learning are thought to facilitate different levels of change within organisations. Argyris and Schon's (1978) 'double' loop learning uses a dialectical process to articulate and then reconceptualise goals in order to reveal theories that guide action, so as to be able to change them, for a deeper transformation. Double loop learning has been applied to adaptive management, theorised as learning that allows a system to create new paradigms for adaptation (Michael, 1995). Further, it has been argued that indigenous knowledge uses double loop learning to facilitate re-organisation and transformative change in SESs (Berkes et al., 2003). A similar approach uses the term 'deep learning' to describe the type of learning that occurs during re-organisation, when underlying philosophies of the system are challenged (Gunderson et al., 1995). In these models, there is recognition that in order to transform, the collective must engage in a deep form of learning that facilitates individual and collective transformation. As was highlighted in Chapter 2, an area of contribution of this research is in furthering theories of 'deep learning' for facilitating transformative changes.

One approach to facilitating profound change and individual cultivation points out that while double loop learning uses reflection to question underlying assumptions, it continues to be an intellectual and cognitive process (Peschl, 2007). The development of triple loop learning, as part of the U-theory approach (Sharmer et al., 2001) acknowledges the need for learning to enter an existential level, where reflection is used to facilitate profound change. Building further on this existential level is the use of critical self-reflection of assumptions as able to facilitate a change of perspective (Mezirow, 1998). This existential change is not incorporated into the adaptive management literature, yet I have argued that it is important for Kuna transformative capacity.

In Chapter 7 I analysed Kuna rituals as rites of passage, showing that critical self-reflection that is transformative could be facilitated during a liminal phase of rituals. Some rites, such as the coming of age ceremonies for girls, are deliberately used to guide people through liminal phases to transform them from one social stage to another. A similar use of liminality is found in healing rituals that are widely used by the Kuna. Kuna ritual practice generally encourages the experience

of using critical reflection on a particular situation or problem at hand to produce transformative changes in individuals at important moments in their lives.

Using Turner's (1979) notion of public liminality, I extended the argument by showing that using critical self-reflection as part of rituals is also applicable to the collective sphere. This is done both explicitly and implicitly by the Kuna. The *war uet* ritual is an example of a formal Kuna response to the need to overcome crisis. The collective ritual facilitates transformation through use of collective liminality where self-reflection and uncertainty foster creativity. In a trance like state the collective engages in what has been referred to as 'communitas' (Turner, 1967). 'Communitas' in this case refers to a space in which foundational patterns of human nature beyond social structures may be appreciated. The transition fostered through this space enables new creative approaches to dealing with the crisis at hand, transforming social structures.

The *war uet* rituals are evidence that Kuna practice has developed a deliberate system for facilitating collective reflection through engaging in 'communitas'. They are the most deliberate vehicles for producing a transformation in the system, used at times of peak crisis, when the transformation needed is radical. They are, however, costly processes for communities because they require total community engagement for eight consecutive days, during which only minimal productive activities can continue. The collective therefore requires a more implicit process for using critical self-reflection to engage in transformative changes that are less critical but necessary. This may be accomplished through ensuring the capacity to engage in critical self-reflection of individuals through their participation in rituals at important moments of their lives such as coming of age ceremonies or during healing practices. Another vehicle for building reflective abilities is through training of specialist leaders.

Rituals have been recognised as important in the adaptive capacity of traditional knowledge. The focus in the adaptive management field, however, has been on their value for enhancing memory, interpretation of events and cultural internalisation of knowledge (Berkes & Folke, 2002; Folke, Berkes, & Colding, 1998). All of these processes suggest that ritual aids cognitive processes. This is a common view of the instrumental value of indigenous knowledge in adaptive management, which is documented widely (Berkes et al., 2000; Berkes & Jolly, 2001). Even when recognising that indigenous knowledge is well suited to dealing

with complexity and complex societal problems (Berkes & Berkes, 2009) this SESs analysis continues to focus on cognitive processes.

Taking a different approach, Crate (2008) chooses to use the term 'sacred' to emphasize the dynamic nature of traditional wisdom used in Sakha practice. She shows that its value lies in building reciprocal relationships between humans and animals within an indigenous cosmology that emphasises reciprocity. This framing of indigenous knowledge as facilitating relational processes related to cosmological frameworks is a step closer to the interpretation given to it in this thesis. Similarly, the experiential role of ritual practice in shamanic practice has been shown to be important for individual and collective ability to transform in times of crisis (Lewis, 2008; Walsh, 2001). Shamanic practices therefore point to ritual practice supporting transformative changes not through cognitive processes of reflection, but through altered states in which fundamental changes in orientation occur. While I cannot provide evidence of altered states, my findings regarding Kuna ritual practice indicate that the experiential nature of ritual, which is often ignored in literature on indigenous adaptive management, is an area that needs more attention.

One difficulty with reaching firm conclusions regarding Kuna transformative capacity is that radical transformative changes, unlike numerous examples of adaptive changes (such as the continued changes that are made to community regulations or ongoing development initiatives and adjustments made to Kuna institutions at the Comarca level) are not as easily visualised. One reason for this is that they use the same social vehicles as those used for adaptation – collective processes – so superficially transformation is not easily distinguished from adaptation. The procedural difference lies in the depth of reflection and the use of transcendence to 'communitas' or spaces where one can move beyond knowledge and deal with the unknowable. Further research specifically looking at transformative changes would need to perform systematic debriefs of participants to understand the use of altered states of consciousness and critical self-reflection in adaptive and transformative processes.

The argument that ritual practice is fundamental to the ability of communities to transform raises the question, how does ritual practice promote transformative ability at the Comarca level? Communities are subsystems of the IBCS, they are embedded within the Comarca. The relationship between ritual practice in

communities and Comarca transformative capacity is secured through participation of individual leaders of communities in Comarca processes. The development of leadership skills through community processes, as was shown in Chapter 6, is transferred to the Comarca through direct participation of leaders in the Comarca. Similarly, it can be argued that the ability to use critical self-reflection in collective processes is transferable from the community to the Comarca. While there is no equivalent of the *war uet* ritual practiced at the Comarca level, there are aspects of collective processes that can re-create a space for engaging in communitas. The meetings of the CGCK explicitly use the chanting of *sailagan* as a medium for Comarca dialogue. The CGK is also considered a sacred space, and it is held within the *onmaked nega* in a community, symbolised by the blessing received by an elder from the CGCK. This framing of the Comarca processes as sacred spaces facilitates a re-creation of dialogical spaces such as those found in communities, where critical self-reflection and engaging in communitas are practiced. Participants are aware of how the process works in a community setting and thus can participate in its re-creation. Transformative changes at the Comarca level are therefore best understood as facilitated through both the space of dialogue and the ability of participants to use critical self-reflection.

In conclusion, I have argued that Kuna adaptive capacity occurs at two levels; one that fits within the adaptive management approach and one that is best thought of as facilitating transformational change. Both formal and informal processes and networks create shadow spaces through which both adaptive management and transformations are facilitated by adaptive leadership. Further, I have argued that the meshing of formal and informal in Kuna social and cultural processes illustrates how awareness of networking practice can support a blending of instrumental and self-organising behaviours, creating more resilient collectives. Ritual practice is explicitly required to guide transformative changes of the collective, and an experiential approach to indigenous knowledge and practice can better inform theories of adaptive management and transformative changes. In the following section, I build upon these findings to discuss what the Kuna self-organising process can tell us about fostering endogenous development in the current age of heightened complexity.

9.3 Reflexive Governance for Endogenous Development

I have approached endogenous development through a CASs framework, attempting to build understanding of the dynamics that underlie a locally driven process of self-organisation while simultaneously viewing it as connected into multiple scales. This is particularly important in today's context of globalisation and heightened complexity. In my initial scoping of the research focus, discussed in Chapter 2, I argued that some theories of governance which recognise the challenge of complexity and the need for cross-scale interactions offer vehicles for endogenous development processes to be cognizant of sustainable development and co-evolutionary interactions. In other words, understanding self-organising processes as nurtured through governance enables findings regarding adaptive capacity to inform theories of endogenous development. In this section, the findings of the research are discussed in order to further adaptive and reflexive governance models.

9.3.1 Furthering reflexive governance

Some governance models highlight the importance of a cross-scale approach which considers sustainable and co-evolutionary interactions (Folke et al., 2005; Lebel et al., 2006). The most useful model for understanding governance for endogenous development through recognising complexity and uncertainty, is the reflexive governance model (Voss et al., 2006). It argues for a focus on interconnectedness and applies systems thinking to problem solving. Reflexive governance points to two levels of reflection as necessary. First order reflexivity is used for dealing with the unintended consequences of modernity that arise through non-linear system interactions, while second order reflexivity entails reflection on the governance process itself. This is coherent with the challenges that Beck (2009) argues are created in today's 'risk society'. The two levels of reflexivity echo the two types of changes discussed in the model of Kuna adaptive capacity; adaptive management and transformative change.

Reflexive governance is theorised as able to manage uncertainty through dealing with unintended consequences, and is able to be transformative by being reflexive of its own practice. The model further highlights that a systems approach is useful

for implementing reflexive governance, and outlines three aspects for dealing with sustainability problems, as shown in Table 7.

Table 7 Reflexive governance

Three ways in which reflexive governance addresses sustainability problems (Adapted from Voss et al., 2006)

	System Analysis			Goal Formulation	Strategy Implementation
Specific Problem features	Co-evolution across multiple scales	Uncertainty of effects of interventions	Unpredictability of social processes	SD goals involve trade offs	Distributed capacities to influence transformation
Strategy Requirement	Transdisciplinarity	Adaptive strategies and institutions	Anticipation of long-term systemic effects	Iterative participatory goal formulation	Interactive strategy development

Three aspects of problem treatment are identified in the reflexive governance model: system analysis, goal formulation and strategy implementation. The first aspect is concerned with the role of governance processes in analysing sustainability problems using a complexity lens, and leads to three specific problem features: scale and relationships between subsystems, uncertainty, and unpredictability of nonlinear dynamics. Several methodological tools are offered, including processes for integrating knowledge across society and scales, processes for facilitating adaptive management and anticipation of long-term system effects. In my discussion of the Kuna model of adaptive capacity some aspects of this systemic analysis have already been covered. In the following section, I discuss further how the Kuna governance model can inform theories of sustainability system analysis.

The second aspect of problem treatment identified in the reflexive governance model relates to governance processes that ensure decision making is consistent with sustainability goals. Goal formulation is concerned with the need to manage through trade-offs that are inherent in sustainability issues. Aspects of this have also been discussed in terms of fostering adaptive and transformative changes through the Kuna adaptive capacity model. The focus in the following discussion is

on what the Kuna governance model can tell us about practically managing to maintain coherence between sustainability goals in a pluralistic society. What follows, therefore, is a discussion of aspects of the Kuna governance model that emerge from combining the threads of the thesis, with a view to informing theories of endogenous development within the context of heightened complexity.

9.3.2 Recursive governance

One of the important challenges that sustainability poses to governance and therefore endogenous development is the need to manage the paradox of simultaneously fostering change and conservation. There is an inherent tension between the need to foster innovations to enhance potential of the system to deal with uncertainties while at the same time conserving the practices and methods that are sustainable over longer periods of time. The social-ecological resilience literature uses a qualitative model, known as the 'adaptive renewal cycle', for interpreting CASs as dynamically moving through stages of growth and conservation then leading to release and re-organisation (Holling & Gunderson, 2002).
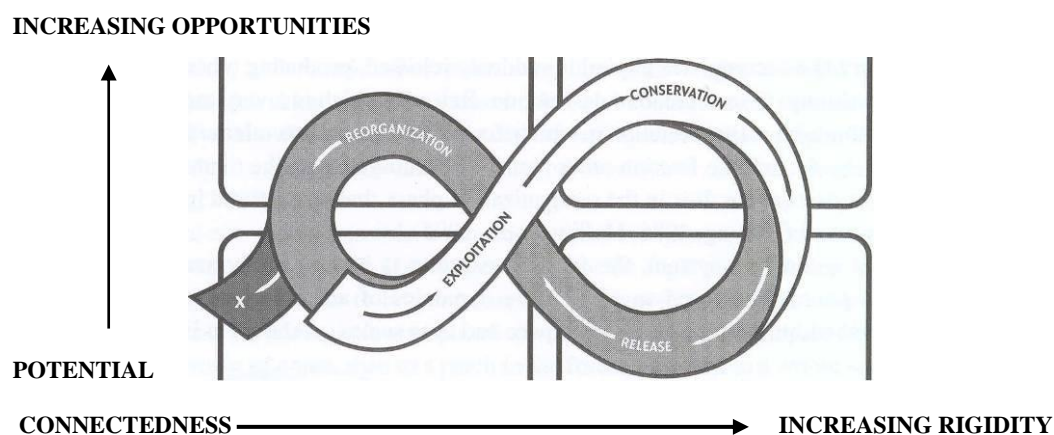
Figure 12 The adaptive renewal cycle

From (Berkes et al., 2003)

Figure 12 shows the four system stages and the flow of events through them, reflecting changes in two properties (1) y axis: potential inherent in accumulated resources and structures; (2) x axis: the degree of connectedness among controlling variables. The adaptive renewal cycles shows how a CAS flows from long periods of accumulation and transformation of resources called exploitation and

265

conservation into shorter and faster periods where opportunities are created and innovation occurs, or release to re-organisation (Holling, 2001). As capital of the system accumulates (in an ecosystem this capital might be the nutrients, biomass, or physical structure, while in a social system it includes the skills and networks of human relationships and mutual trust, together known as social capital) the connectedness of the system increases, and thus the system becomes increasingly rigid. The rigidity of the system will eventually cause its collapse. The collapse or extreme change might be triggered by a disturbance, in a community for example, an epidemic might cause a severe social collapse that will trigger transformation.

The adaptive renewal cycle model has been used to highlight that the tension between conservation and innovation is a necessary aspect of a resilient SES, and through the tension, opportunities for sustainable development can be leveraged (Rammel, 2005). When using the adaptive renewal cycle model to understand Kuna governance processes what emerges is an image of governance at different collective levels, in communities and the Comarca, cycling through iterations of adaptation, requiring moments of conservation and re-organisation. This cyclical process is coherent with my previous discussion of adaptation and transformation through the Kuna adaptive cycle model. Continued iterations of adaptation nurture self-organisation. Kuna governance, therefore, is both creative and conservative.

The generic use of a CAS framework in SESs has been contextualised in this research through taking an IBCS approach, which I defined as a linked socio-cultural and bio-physical system that expresses the collective biocultural heritage of a particular indigenous people, as the result of a co-evolutionary relationship within a specific territory (see Section 3.6). The added value of the IBCS approach is that it recognises the importance of long term co-evolutionary relationships between people and land. In Chapter 6 I described the *onmaked* governance system used in communities and at the Comarca level. A long term co-evolutionary view of the *onmaked*, which the Kuna claim, through stories of the *Bab Igar,* to have been developed by Ibeorgun, coupled with a daily localised iterative process, begins to illustrate how the system can practically reconcile tensions of creativity and conservation.

The daily meetings that take place in *onmaked nega* in communities ensure that the iterations are close to one another, facilitating fast changes and actions

when they are required. Rapid changes in communities maintain a high level of diversity and creativity, enhancing their ability to deal with surprise and uncertainty. Simultaneously, each iteration encodes information into collective memory, into *Bab Igar*, allowing a long term view of change and adaptation. The continued use of *Bab Igar* in daily processes fosters a long term view of change in the IBCS, enhancing collective awareness of changes that are occurring across slower co-evolutionary processes between subsystems. The ongoing iterations of collective processes are able to facilitate fast changes and simultaneously build awareness of slow processes as part of Kuna community governance.

The Comarca governance system described in Chapter 8 takes place at a larger and slower scale, within which the smaller and faster community processes are embedded. Iterations occur across longer periods of time. The entire Comarca meets a minimum of twice a year for each of the CGCK and CGK. These Comarca wide meetings can loosely be thought of as iterations of adaptive cycles of governance, in which creativity and diversity are maintained through participation of a variety of leaders from communities. The collective memory in this case is the institutional memory of the CGK and CGCK. Today, the memory is also recorded in minutes of the meetings, in which decisions and resolutions are carried over to discussions in future meetings. Within the CGK and CGCK formal processes, there are further iterations that do not involve the entire collective but just the management structures. The building of collective memory is further facilitated through these Comarca processes. Diversity and creativity at the Comarca level is enhanced by the semi-autonomous nature of the Comarca governance system that brings a diversity of ideas from the community levels up through participation of leaders.

In this section I have shown that the CASs analytical framework and the adaptive renewal cycle, coupled to an understanding of the Kuna *onmaked* system of governance have produced a view of recursion as fundamental to endogenous development. I have argued that Kuna governance uses processes that can foster both innovation and conservation across scales within the IBCS of Kuna Yala. The recursive process which connects across scales is better placed to build awareness of interactions across time and space. While it is true that use of *Bab Igar* is currently weakened, Kuna governance continues to use the *onmaked* system and

community governance continues to be embedded within Comarca governance. The enabling conditions for recursive governance continue to be produced by Kuna socio-cultural practice.

9.3.3 Transdisciplinary governance

A second challenge that local governance faces in light of the complexity and uncertainty involved in sustainability is the need to integrate across multiple forms of knowing and across different social groups (Kemp & Parto, 2005). Using a CASs framework makes this challenge central by illustrating that interconnections between the parts of the system are the source of its self-organisation. Governance not only needs to break down barriers to foster interactions and communication between different knowledge systems, but it also must promote interactions that lead to innovative emergent solutions. In analysing the social limits to adaptive capacity, Adger et al. (2009) found that governance systems that are able to deal with inherent differences in values held by society and the conflicts they produce are able to maintain high adaptive capacity in the face of unpredictable perturbations such as climate change. Sustainability science already recognises the need for research that includes multiple knowledge spheres (Clark & Dickson, 2003; Kates et al., 2001). While it may be clear that more integrated approaches are necessary for dealing with complexity and sustainability, the evidence to date is that collaborative analysis of sustainability problems and generation of solutions is easier suggested, than undertaken. The Kuna case can offer some suggestions in this regard.

In addition to the challenge of integrating across knowledge systems to improve understanding and management of sustainability problems, governance in any local community or collective deals with real life problems in which a multitude of stakeholders with different values are involved. Undertaking system analysis for governance of sustainability generally requires a move to problem driven inquiry with participation of key stakeholders. This means a move towards transdisciplinary approaches to problem solving that recognise complexity, link different knowledge spheres and support participation (Lawrence & Despres, 2004; Munasinghe, 2001; Wickson, Carew, & Russel, 2006). Thinking about transdisciplinarity and the challenges it faces as an approach to problem solving

provides a useful way of framing how the *onmaked* system is able to deal with sustainability and complexity (Apgar, Argumedo, & Allen, 2009).

The *onmaked* system of Kuna communities (see Chapter 6 for details) appears to be able to promote transdisciplinarity through several avenues. First, it provides a space within which problem analysis and solution building processes concerned with different aspects of collective life interact to enable holistic solutions. Through the same central process and continual iterations, community interests such as health, education or economic development are discussed and managed. This allows for continual cross fertilisation of ideas between different fields when addressing specific problem areas. In Chapter 6, I illustrated how the *onmaked* system of dialogical leadership relies on middle leaders who participate both through their administrative expertise and as speakers in *onmaked nega*. While it is impossible to prove that holistic governance has indeed occurred (defining what a holistic solution to a complex problem looks like is an impossibility) what has been shown is that an avenue for discussing problems or matters in *onmaked nega* enables multiple viewpoints to be expressed (see Box 6.1 for an example). Accordingly, I argue that the process used provides opportunity for a holistic approach. If this system is compared to governance which relies on formal institutional processes, or decision making within institutions, such as University departments, then it is possible to appreciate that the centralised, open and participatory *onmaked* approach can overcome some of the difficulties that a compartmentalised institutional approach creates. However, as I have shown in Chapter 8, Comarca level governance seems to be tending towards more rigid institutional structures that could potentially undermine Kuna holistic governance (this is discussed further in Chapter 10).

While part of the integration necessary for transdisciplinarity occurs naturally through the centralised community system, reflexivity is also used to deliberately bring together all expertise with community participation in problem analysis and solution building. As some argue, simply bringing people together does not necessarily lead to good collaboration or integration of ideas (Pohl, 2005). Barriers to learning across knowledge systems identified in adaptive management are organisational and social (Allen & Jacobson, 2009). In collaborative research, barriers faced include a tendency to discount some types of knowledge, difficulties with communication between groups and overcoming conceptual models that do

not embrace complexity (Strang, 2009). Collectively, these different barriers highlight the challenge to finding appropriate processes to promote the development of respect and shared understanding among diverse stakeholders. Nicolaides and Yorks (2008) argue for the need for an 'epistemology for learning through' that focuses on learning as an ongoing action and is necessary for dealing with complexity. In another approach, called diversity management, critique and self-critique in triple loop learning helps interventionists decide what method or approach to use (Flood & Romm, 1996).

In the case of Kuna governance 'learning through' and 'diversity management' can be facilitated through use of dialogical processes within the *onmaked* system. These protocols have evolved over generations of collective practice; they emerge out of recursive governance, and continue to be employed. As I noted in Chapter 6, leadership plays a fundamental role in facilitating the *onmaked* processes, but Kuna leaders are not perfect and application of dialogical principles are subject to the weakness of human praxis. However, leadership development has been shown to be an important vehicle for nurturing appropriate skills in leaders along with technical expertise and understanding of the holistic cosmological framework. Through open dialogue in *onmaked nega*, it is common for discussion about a particular community issue - management of the airport for example, or the increased levels of childhood asthma - to take on philosophical dimensions as leaders engage in reflexive discussion of different aspects of the complex problems.

Inherent in the collective dialogical processes that can link knowledge systems is the use of conceptual frameworks that recognise the different parts of the system in question. Conceptual frameworks are mental constructs that we use to frame, understand and engage with the world and are sometimes called mind maps, mental models or conceptual models (Johnson-Laird, 1983). These mental constructs always exist in our way of framing issues even if most of the time we are not aware of how we use them to make sense and take action in the world (Argyris, 1999). Conceptual frameworks that recognise complexity can support integration of knowledge systems by helping those involved to recognise multiple interacting parts while also allowing self-organisation by viewing the whole as more than the sum of the parts (Apgar et al., 2009). Through analysis of the *onmaked* process presented in Chapter 6, and interpretations of others (see for example Howe, 1986)

I have argued that skilful Kuna leaders use *Bab Igar* to facilitate dialogue and integration. As the product of self-organisation, *Bab Igar* is a conceptual framework that embodies processes that nurture complexity and adaptability. Today, cracks can be seen in the ability of the Kuna to continue to nurture this process, and I address what these mean for Kuna practice in the following chapter.

9.3.4 Supporting self-determination

Reflexive governance recognises that goal formulation is essential for planning and managing for sustainable development. It is challenging because, as was discussed above, it requires integration of the views of multiple stakeholders with multiple values. But perhaps even more challenging than integrating different values is the inherent tension that exists between short and long term goals. As I argued in developing my own approach to endogenous development (see Chapter 2), integration of goals across scales is a key aspect of managing complexity and uncertainty. Further, I showed that some recent approaches to sustainable development illustrate that a process of defining needs locally, based on local cultural and symbolic models, must be coupled to an appreciation of the biophysical constraints within which a community develops. For example, the recent model of Morrison and Singh (2009) points to the need to select appropriate satisfiers of needs for both biophysical and cultural or symbolic goals. This model outlines a challenge for enabling endogenous development locally, while being cognizant of sustainability constraints. The challenge lies in building coherence across scales (temporal and spatial) and levels (physical and cultural) of sustainability goals. To do this practically, two things are necessary: (i) governance must have a framework for defining and distinguishing between different levels of goals; and (ii) a process of reflexivity must allow decisions that lead to changes in the system to be compatible across the levels. The Kuna case offers some insight into how governance can move in this direction.

The Kuna framework of *Bab Igar* can help distinguishing between different levels of goals. As well as being holistic, the *Bab Igar* framework alludes to 2nd order sustainability goals (those related to the cultural and spiritual realm) in terms of the relationship between all beings in the cosmos. Other indigenous peoples similarly use their cosmological frameworks to define well-being in a manner that recognises the interconnections between all beings (Apgar et al., 2009). An

example is the Quechua s*umak kausai* principle of a harmonious relationship between all beings through a practical philosophy of nurturing connections (Viteri Gualinga, 2002). Cosmological frameworks that focus on interconnectedness exist across cultures. As Rappaport (1999) argues, symbolic aspects such as spiritual connection to Mother Nature are preserved through adaptation and co-evolution in all cultures. Using a cybernetic approach, Bateson (1972) views living systems as goal seeking systems, which seek to maintain the truth value of certain propositions in themselves. These propositions that are their truth value are preserved through adaptation. The point being made here is not that the Kuna *Bab Igar* framework is necessarily distinctive, but rather that it continues to be used and understood as a framework that preserves a Kuna 'truth value'. Without this, Kuna development would be unable to support self-determination.

The second aspect that is required has to do with how, practically, the Kuna ensure coherence across scales of sustainability goals. The centralised iterative nature of the *onmaked* system allows for different levels of collective management to be discussed simultaneously; discussions on practical aspects of managing community life, for example the management of trail clearing, touch upon issues of managing well-being of the collective, through connecting trail clearing and production to current problems of reduced productivity, which in turn becomes a discussion on how governance deals with such a problem and if in fact it is failing. These levels of reflexivity that are embedded within the governance process facilitate coherence across orders of goals and objectives.

Levels of reflexivity have been shown to be important for adaptive management. Adaptive management has also been proffered as a process that can pragmatically resolve conflicts that are inherent in sustainability decision making (Norton, 2007). This argument has been extended in the adaptive governance model, which relies on the same processes of adaptive management to build resilience in SESs (Folke et al., 2005). While there is no doubt that adaptation is an important aspect of reflexive governance, I have argued that adaptive management is unable to deal with deeper level changes. These deeper changes are in line with second order reflexivity, which involves reflection on the processes themselves. In times of crises, when radical changes are called for, the system must have a vehicle for building coherence across 2nd order cultural and symbolic goals, and 1st order objectives or needs – to make sure that the radical changes will not undermine

viability of the processes. My findings on Kuna transformative changes shed some light on how this might practically be accomplished.

The process for fostering transformative changes in Kuna individuals and collectives employs rituals, which I have argued facilitate critical self-reflection. At this level of reflecting and transforming, what is required is experiential engagement with communitas. Morrison and Singh (2009) relate the experience of what I call communitas (borrowing Turner's (1967) usage) to recognising uncertainty and unknowing through western theological classifications of knowledge; positive or systematic knowledge is useful in an instrumental sense and negative or pre-systematic knowledge recognises uncertainty and unknowing. In dealing with crises, pre-systematic knowledge is necessary to empower action while at the same time recognising the limits of positive knowledge. This would seem to be a plausible answer to Beck's (2009) interpretation of the challenge we face in the current 'risk society' where non-knowledge rules. It extends the reflexive governance approach to practically support second order reflexivity.

Bringing systematic and pre-systematic knowledge together, then, creates a form of knowing which is adequately termed wisdom. Gregory Bateson calls this realm of knowing 'aesthetic knowledge', in the words of Harries-Jones (1995, p. 199) "Bateson claimed that aesthetic knowledge could only be gained through attention to all the natural senses, conscious and unconscious, and suggested that existing methods of sensing employed by Western science were inadequate for proper scientific knowledge of ecosystems." Varela et al. (1991) similarly argue, through use of an autopoiesis model of living systems, a need to integrate the positive, conscious dimensions of scientific knowledge and the experiential realm of the 'self' to understand the mind as embodied. What all of these approaches point to is a need for a process that can enable access to aesthetic knowledge of the whole (which ironically requires recognition of the limits of knowing) building wisdom to enable action in the face of crises.

My findings regarding Kuna ritual practice suggests that ritual can potentially enable aesthetic knowledge of the whole connecting to the sacred dimensions. This adds an experiential appreciation of practice to those who have intuited that indigenous knowledge employs the sacred (Berkes, 1999). As the World Faiths Development Dialogue (WFDD, 2001) note, including the spiritual realm in development requires the practice of transcendence, allowing connection to the

sacred and divine to ensure well-being. The Kuna practice of ritual as a vehicle for engaging with communitas appears to be able to produce wisdom, in the sense used by Morrison and Singh (2009), understood as knowledge that combines positive theoretical and empirical approaches and unconscious realms of unknowing.

I analysed Kuna ritual as important for individual and collective adaptive behaviours, and when these findings are coupled with my observations of governance and use of *Bab Igar* in recreating sacred spaces (e.g. within *onmaked nega*) further insights emerge. Within the sacred spaces of the *onmaked* the experience of communitas of individuals and collectives can be thought of as encouraging transcendental practice and use of wisdom while *igar aminae* (looking for a path or a way); finding ways through a crisis. I am not arguing that the Kuna governance system will use its wisdom to succeed against all odds, bur rather that it is able to function at the levels and in practical ways that can enable sustainable development along the lines of those argued by Morrison and Singh (2009). Further, reconciling levels and orders of sustainability goals is important for achieving co-evolutionary development (Norgaard, 1984). Building awareness of processes across scales appears to be a strength of Kuna governance.

In summary, I have argued that the Kuna *onmaked* governance model helps to further models of reflexive governance in three significant ways: (i) it illustrates that a recursive process of governance is able to deal with the paradox of requiring both conservation and innovation through use of collective memory and continuous collective processes; (ii) it creates a space for transdisciplinarity through use of dialogue protocols and a holistic framework, and, (iii) with the help of ritual practice development across orders of sustainability goals can be meaningfully reconciled. These aspects of Kuna governance help illustrate how endogenous development is nurtured, and how it can support the self-determination of Kuna Yala. In the following section I discuss some insights that I gained through reflecting upon my use of a CASs framework to undertake research into coupled human and environment systems.

9.4 Adaptive Capacity and Resilience of CAS

In Chapter 2, as I scoped the research agenda, I argued that a socio-cultural processes approach to adaptive capacity of linked socio-cultural and bio-physical systems can contribute to fields concerned with adaptive capacity. In this section, I

discuss two areas of contribution the thesis makes to a resilience approach to social-ecological systems (SESs). The resilience approach has emerged from an ecological background (Holling, 1973, 1986). Moving from the ecological perspective to one appropriate for SESs is an important yet challenging development for resilience theories and research. As Adger (2000) points out, an ecological resilience concept cannot simply be placed onto the social sphere without recognising that social systems are qualitatively different from ecological systems. Thinking about the social aspects of SESs can provide new fruitful avenues for improving the development and application of resilience theorising.

9.4.1 Defining a desirable resilience landscape

A focus of the ecological approach of resilience theories and practice has been to measure resilience in terms of the amount of disturbance a SES can withstand and still remain in the same domain of attraction, or stability landscape (Carpenter et al., 2001). It follows from this that the objective of resilience management as developed by Walker et al. (2002) is "to prevent a SES from moving into undesirable configurations" (p. 2). An important point to remember when using a resilience approach is that not all stability domains that a SES might have are desirable from a management perspective. So, when building resilience of a SES is the goal of management, it is necessary to make a judgement about what stability landscape is desirable (Carpenter et al., 2001; Levin et al., 1998; Walker et al., 2004). If a system is in a desirable domain, then the goal of management is to keep it within that domain, and when it is in an undesirable domain then efforts focus on influencing a transition into a more desirable domain.

For resilience management to be applied in any SES, first, a decision needs to be made about what domain is desirable. This raises important questions regarding the process used in making the decision, and who makes the decision, based on what end goals? This is a governance question that has necessarily added to already recognised questions of the resilience of what? and resilience to what? (Carpenter et al., 2001; Walker et al., 2002) a further question of resilience for whom? (Lebel et al., 2006). It is at this stage that a socio-cultural processes approach is important for application of resilience management. When resilience is defined in social terms, it is necessarily connected to human aspirations of well-being that include

275

knowledge, wisdom, social relationships and spirituality, among others (Berkes & Jolly, 2001). This social approach focuses on supporting the ability of SESs to renew or re-organise in the face of change. For example, in the climate change area efforts are now turning to building adaptive capacity through focusing on the social context (Adger et al., 2009), in the face of unprecedented change.

My research findings highlight the importance of having an adequate process for decision making that can include multiple perspectives on whether the current system regime is desirable or not, and what attributes of the system are to be maintained, and to what end. I would therefore add to resilience of what, to what and for whom, the question: resilience for what ultimate SES goals? I have argued that the Kuna governance model shows an ability to link adaptive capacity to well-being through use of its *Bab Igar* framework and transcendental practices. In Kuna Yala ultimate goals of the IBCS are defined through the *Bab Igar* and are continually reflected upon through cultural practice. The goals are therefore both ecological and social; sustainability is about nurturing a continued interaction and relationship. Much of the current application of a resilience approach to managing SESs is unable to engage at this fundamental level, because it begins from an ecosystem management paradigm and has become a tool to help management reach its goals rather than an opportunity to reflect upon the SES goals it is trying to reach.

A recent regional resilience assessment is a good example of the limitations that are encountered when the social domain in the process of deciding ultimate goals and influencing management are not adequately addressed. Walker et al. (2009) begin with a historical overview of a catchment area that leads to a prediction of the SES being in a conservation phase that will soon enter a release phase. The resilience assessment, which focuses mainly on known biophysical thresholds, is used to provide input to the management system that is attempting to maintain the current regime. Almost as an afterthought, the authors end the paper by suggesting that a transformation is needed, and provide some ideas for how the management team might promote it. The importance of different stakeholder values is initially assessed in terms of their ability to influence rules and behaviours to move the system across thresholds, recognising that those lobbying for intrinsic ecosystem values, such as indigenous peoples, have little influence. The lack of depth in analysing the social and cultural context of the SES misses an opportunity to begin

to visualise how a transformation, that is inevitable in the system, can be guided to ensure that a more sustainable regime is entered. Including a thorough examination of power relations, such as those between the catchment management entity and all stakeholders, including those with little power and opposing values, could highlight that the current management approach is in 'lock-in', which is likely to end in a catastrophic crisis. Finding a way forward requires that all perspectives be considered.

The Kuna case demonstrates that how the end goals are defined and reflected upon is important for SES sustainability in a complex world. For the Kuna, sustainability is linked to a qualitative relationship between the social and ecological spheres that is important to the survival of both systems. Similar arguments for sustainability have been made through a co-evolutionary perspective by Norgaard (1994). Fostering and facilitating transformations has become a central focus of this synthesis chapter, because inquiry has shown the importance of cultural practice that is reflexive about its own system as a vehicle for fostering change and building resilience. Tools are being developed to facilitate the necessary transformations to more sustainable regimes, such as transition management (Kemp, Loorbach, & Rotmans, 2007), and the social metabolism perspective (Fischer-Kowalski, 1999; Krausmann, Fischer-Kowalski, Schandl, & Eisenmenger, 2008) both of which are concerned with radical change in societies linked to their relations with the environment. What is required, though, before these tools are used, is to ensure that the defined SES goals for which transitions are made, are consistent with a sustainability approach to interactions between the social and ecological spheres. I suggest that one step in this direction can be taken, by those using a resilience approach, by ensuring that the social and cultural spheres of SES are as thoroughly understood as the ecological. Further, they should be incorporated when defining the goals of management.

9.4.2 Acting in the face of true uncertainty

The second area of contribution the thesis can make to the resilience approach is related to insights that the Kuna case provides on how to deal practically with high levels of uncertainty. The resilience paradigm is firmly situated in a complexity approach, and uses CAS models. Uncertainty and unpredictability are therefore central driving forces in developing the adaptive and resilience management

approach. A special 20 year retrospective on the use of the resilience approach notes that it has been useful to management:

> …not by providing a mechanism that can be used to predict the impact of management actions, but rather by focusing attention on particular system attributes that play important roles in the dynamics of SESs and attempting to develop principles to guide interventions in SESs to improve their long-term performance. (Anderies, Walker, & Kinzig, 2006, p. 2)

At the heart of the approach is a central concern of mine in this research; recognising that 'managing' CASs requires nurturing processes for learning and change.

A shift from environmental management based on expert scientists to a resilience and adaptive approach that emphasizes uncertainty and participation of stakeholders, according to Ludwig (2001), marks the end of the management era that has been shown to be pathological in resource management (Holling & Meffe, 1996). Some years later, however, the challenge of shifting to a complexity approach is still with us. The challenge seems to lie in the difficulty of changing management culture from one that values control and clarity to one that embraces complexity (Allan & Curtis, 2005, p. 423).

An example of how control and clarity continues to guide management even in resilience approaches is the focus on measuring of system resilience in order to make the concept more operational for management (Carpenter et al., 2001). This suggests that researchers and practitioners continue to use a paradigm of experts informing management and policy, albeit with different types of expertise. A similar undermining of adaptive management under current management approaches is obvious when it is described as useful primarily because of its ability to reduce ecological uncertainty through experimentation (Gregory, Ohlson, & Arvai, 2006). It is seen as being most useful for simple environmental problems and most challenged by complex problems such as climate change. This seems to contradict the initial impetus for building adaptive management through recognising complexity and uncertainty.

Uncertainty in decision making in environmental management is not a new phenomenon. What is new is the recognition of it being an important part of complex interactions between interlinked processes. Scientific approaches that have informed environmental and sustainability policy have historically viewed

278

uncertainty as weakness or an error and aim to remove or reduce it. For long term and highly complex SESs that involve both biophysical and social elements, true uncertainty means that prediction is an impossibility (Costanza & Cornwell, 1992). Unpredictability as I use it here refers to difficulty in determining cause and effect relations in CAS due to non-linear interactions which produce constant change, and as open systems they are always subject to influence from their environment.

The climate and its unpredictable changes is perhaps the ultimate complex problem of our time, and as such, it is an area that has grappled with uncertainty in science and policy development. This, however, is not because there is more uncertainty in the science of climate change than other environmental change or complex phenomena, but rather because uncertainty has become a justification for political inaction. One report shows that underestimating uncertainty has been deliberate because of the need to provide accurate predictions for policy formulation and action (Obersteiner, 2001). Ultimately, it is a problem of management approach and not the uncertainty of science.

Uncertainty in science and its use in management is an area that moves beyond scientific practice and requires an appreciation for the perception of high levels of uncertainty through language and interpretation of perceived risk (Manning, 2003). The approach taken by the Intergovernmental Panel on Climate Change to overcome the challenge of human perception of risk has been the development of guidelines for expert authors to communicate levels of uncertainty of the predictions their science can make in terms of climatic events and the impact of those events (IPCC, 2005). This standardisation of reporting scientific uncertainty, however, does not overcome the issue of risk perception and continues to be plagued by the need to produce the most 'objective' and certain information for decision making. Coupled to this challenge is a reliance on global modelling methods to predict local impacts of climate change (Wilbanks & Kates, 1999) which provide a false sense of 'knowledge' regarding what to expect.

What can the Kuna case add to our understanding of how best to embrace complexity and deal with true uncertainty? On one level, an adaptive management approach is used within a holistic governance process. Holistic governance uses protocols and processes that foster social learning to deal with continuous change. That indigenous systems are adaptive, however, is not a new notion for indigenous knowledge scholars (Berkes et al., 2000; Peterson et al., 1997). There is a second

279

contribution to be made here, which is bolder, and it requires an appreciation of indigenous knowledge on its own terms. It relates to my findings on ritual practice. Engaging with communitas, is to engage at a level at which the sacred allows recognition of the inability to know the whole objectively, and therefore to embrace not knowing. To some managers this might seem a highly disempowering revelation. To the Kuna, it proves to be exactly the opposite. It empowers the collective to act to the best of their ability, precisely because that is all that can be done. Creativity and innovation become key aspects of acting in an uncertain world. By increasing creativity and innovation, the odds of finding better ways forward are also increased. When this is combined with reflection on system crisis as the result of the failure of past management, new innovative arrangements and strategies shape transformations to move forward. The recognition of true uncertainty in the cosmos, through holistic frameworks and ritual practice, enables action rather than inaction due to a lack of certainty of what to do. Kuna governance, therefore, is well suited to dealing with the current era of non-knowing (Beck, 2009).

9.5 Summary of Contributions to Theory

At the outset of the research I had two objectives; to contribute to a reframing of development through complexity and, to contribute to improving development practice. To reach these objectives, I developed a theoretical framework for understanding development processes through complexity. I then further defined the scope of the research through reviewing approaches to understanding adaptive capacity and governance. This chapter has discussed the findings of the research, illustrating their contributions to three general areas of theory.

First, a model of Kuna adaptive capacity was described as a holistic outcome of the research. The model contributes to theories of adaptive management and transformative change in two significant ways. It shows that adaptive capacity and transformative change of collectives emerge out of a combination of relational spaces which are formed through social networks, and moments of collective processes such as monitoring and evaluation and decision making. This finding furthers the emergent notion of 'shadow spaces' as important for adaptive capacity (Pelling et al., 2008), by illustrating that they are created through organic processes of social interactions. The second contribution of the adaptive capacity model is in

understanding how radical, or deeper, change, called transformation here, is enabled. The findings regarding the experiential nature of individual and collective rituals build upon the implicit recognition of indigenous knowledge systems as able to foster transformations (e.g. Gunderson et al., 1995).

The second theoretical area discussed is reflexive governance. The findings regarding the Kuna *onmaked* system at the community and Comarca levels were shown to contribute to governance models by illustrating three key abilities: use of recursive governance, fostering transdisciplinarity, and defining goals across scales. The CAS framework used has highlighted the importance of use of *Bab Igar*, the collective memory and holistic cosmological framework which is continuously developed through daily *onmaked* processes. Dialogical processes are fostered through use of principles developed through the recursive and self-organising process of governance. Finally, ritual practice and engagement in 'communitas' is argued to be important for managing sustainability goals across scales of time and space.

The third area of theoretical development is aimed at the field of adaptive capacity and resilience of SESs. Two insights from using a CAS framework to understand the dynamics of Kuna Yala can further resilience theories and their practical application. First, I have argued that the Kuna case illustrates the importance of using a local framework to interpret well-being from a whole SES perspective. Resilience analyses used in SES management practice tend to use research or disciplinary driven frameworks, creating a limited view, which may potentially miss key insights regarding whole system sustainability. Second, as resilience and adaptive management are approaches that have developed to deal with uncertainty, the Kuna case is informative on how uncertainty is managed. I argue that the use of ritual for transformative change illustrates the need for recognising true uncertainty and, creativity and wisdom as important in making the best possible management decision.

Chapter 10

Highlighting Leverage Points for Action

Some have called systems thinking the "new dismal science" because it teaches that most obvious solutions don't work – at best, they improve matters in the short run, only to make things worse in the long run. But there is another side to the story. For systems thinking also shows that small, well-focused actions can sometimes produce significant, enduring improvements, if they're in the right place. Systems thinkers refer to this principle as "leverage". (Senge, 2006 pp. 63 – 64)

10.1 Introduction

Following the discussion presented in the previous chapter on theoretical contributions of the thesis, I now turn to the second objective of the research of supporting the self-determination of indigenous peoples. Before proceeding with a discussion of how the findings can contribute to improving practice, it is important to highlight that findings and learning that result from collaborative research are necessarily tentative. As Raelin (2009, p. 11) puts it "The reflective stance embodies a tentativeness and a humility that seeks to work with and learn from the complexity of social behaviour. Practitioners learn to stay with their indeterminacy and resist conceptual closure."

A complex systems view of the world changes the focus of inquiry from seeking answers to making sense, from predicting the future to building sound processes and, from finding the right structure to keeping the structure adaptive (Anderson & McDaniel Jr., 2000). Findings from research into the dynamics of an unpredictable complex system such as Kuna Yala are more accurately thought of as insights into leverage points in the system; points where a small shift is likely to produce big changes (Meadows, 1997). From its onset, the thesis has not aimed to provide clear solutions to complex problems but, instead, to support a process for thinking about and analysing a complex situation in order to shed some light on aspects that seem important for influencing the system positively.

In this chapter I aim to communicate findings which may be useful to the practice of indigenous development. The discussion unfolds through two parts. First, I discuss reflections of the key findings that are relevant to Kuna development practice, nourished through sharing tentative findings with those

involved in the research. In the second part, I discuss how the key findings of the thesis can contribute to ongoing efforts of supporting self-determination of indigenous peoples and their biocultural territories.

10.2 Reflections for Kuna Practice

This research was undertaken in a collaborative manner with the Kuna peoples, with the aim of contributing to an ongoing process of development and change. Thinking about and working towards Kuna adaptive capacity and endogenous development is not a bounded process that has been given conceptual closure through this study. It was therefore important that the thesis be 'returned' to the Kuna, so that its contributions may support endogenous development.

Bringing the thesis and its contributions back into the Kuna process was initiated through my last visit to Panama in April 2010. During the month I spent in Panama I was able to discuss specific aspects of the findings with the reflection group, Ukupseni and Colebir, and with the CGK and CGCK. During a workshop with the reflection group, the main findings and conclusions presented in chapters 6 – 9 were discussed at length. In Ukupseni I presented the key findings in a formal meeting in *onmaked nega* to leaders, but there was little opportunity for discussion. This meeting, none the less, was important for sharing a draft of the thesis with the community, and providing continuity to a collaborative process. In Colebir, I presented the key findings in a community meeting in *onmaked nega*, which was followed by some discussion by leaders regarding several points. Finally, I met with the three *saila dummagan* of the CGK, both secretaries of the CGK, and one secretary of the CGCK in Panama City. Over several hours I presented the key findings and we discussed their implications for Kuna practice. In all of these interactions, the importance of returning and presenting the final thesis in Spanish was reiterated by all parties. As a commitment I made to the Kuna initially, it is a task that remains to be completed after completion of the formal PhD process.

The presentations, meetings and discussions I held while in Panama contributed to the following objectives: (i) to provide continuity to a collaborative research process, thus enabling closure of a participatory research cycle; (ii) to turn the closed research cycle into an ongoing spiral of interaction between the Kuna and other initiatives that are concerned with these and similar issues; and (iii) to begin to highlight areas where future efforts (both through research and action) for

supporting endogenous development could be focused. My interests in collaborating with the Kuna started long before this PhD and will no doubt continue beyond. This final field work step was central to the participatory approach used. Perhaps more importantly, though, it became a starting point for building a bridge between this particular research project and any future engagement I or others might have with the Kuna around endogenous development.

An important step in bringing the research findings closer to the practice of endogenous development during these conversations was to continuously contextualise thinking about adaptive capacity into the current situation of Kuna Yala. I therefore begin by providing an overview of the current context of Kuna Yala, illustrating some of the challenges and opportunities faced. Then, I discuss aspects of the findings that are potentially interesting or useful to ongoing processes of Kuna development. Throughout the discussion, I highlight how reflections from the conversations have added new insights or new perspectives and in some cases signal potential future paths for research and action.

10.2.1 Endogenous development of Kuna Yala today

The Kuna face challenges that are common to indigenous peoples in post-colonial settings. While changes that are creating challenges are both internal and external, the major forces that impinge upon the biocultural integrity of Kuna Yala have their locus outside of the Comarca. The phenomenon of economic and cultural globalisation is reaching Kuna Yala in a more direct way than ever before. As the world becomes more interconnected, Kuna Yala becomes more integrated into the global system. A symbol of the increased connection is the arrival of mobile telephones to some Kuna communities in 2008. We are yet to understand how such new technologies will influence the Kuna socio-cultural world, but already they are creating new spaces and forms of communication and networking that are bound to have significant impacts.

Over the years, a degradation of Kuna cultural values and change in practices is leading to an increasing dependence on external economic systems. Dependence is most obvious in some areas, in Cardi, for example, where tourism has been a substantial economic activity for longer than in the rest of the Comarca. The

recently finished road into the Cardi region has further catalysed tourism development, which has now become the main source of income for communities in the area. Staple crops such as bananas are now imported into the region, indicating dependence on externally produced food. In other areas of the Comarca, in particular in smaller and more isolated communities such as Colebir, subsistence practices continue to support livelihoods. But even in these areas, a slight trend towards more dependence on jobs that pay cash wages and consumption of goods produced outside the Comarca is noticeable.

Other challenges that are a consequence of the interconnected nature of the world include the imminent impacts of climate change. The effects of rising sea levels have already been felt in island and coastal communities in Kuna Yala. In 2008 there was major flooding on several islands, leading to cancelation of a CGK general assembly and requiring relocation of some families. Since then, climate change and related mitigation and adaptation strategies and policies (such as UN-REDD) have become central topics in CGK assemblies. Furthermore, a climate change impact assessment is currently being conducted in Kuna Yala by a Kuna NGO, (Fundación para la Promoción del Conocimiento Indígena) focusing on indigenous knowledge and locally defined adaptation strategies. Communities have started to talk about the potential need to relocate to the mainland as a result of rising sea level. Relocation can potentially bring major changes to the socio-cultural and environmental reality of the Comarca.

In this current context of unprecedented global change, the challenge to endogenous development is perhaps greater than ever before. At the same time, it can be seen as an opportunity for shifting development understanding towards a view of interconnectedness, complexity, and unpredictability. In the current age of heightened complexity it would be naïve to use solutions devised from mechanical simplistic analysis. I now discuss key findings from the research that were shared through the last field visit, illustrating leverage points in the system.

10.2.2 Leadership development

It should not be surprising that leaders play an important role in nurturing endogenous development. Analysis of Kuna leadership development practices illustrated that the *dule igar* system uses a holistic process that can potentially build leaders who embody their role and are able to use self-reflection and the *Bab Igar*

framework to facilitate adaptive collective behaviours. Contemporary community governance continues to use collective dialogical processes that are based on principles of the *Bab Igar*. *Dule igar* leadership training supports this dialogical process through providing skilled leaders. Increasingly, new leadership positions are set up to deal with 'new' structures or roles, which require specialised expertise, for example, members of an aqueduct committee or a community bank. As a result of increasing interconnectedness, leaders are now chosen because of their 'expertise' rather than their leadership skills. A potential consequence is the ability of the *onmaked* governance system being undermined. Still today, however, most strategic leaders continue to be trained through *dule igar*.

These findings have important implications for Kuna leadership development practice today. *Dule igar* leadership development is in decline, with a significant drop in new students taking up study of ritual specialties and formally training to become spiritual leaders. A member of the reflection group spoke of the decline in young people entering the *onmaked* system of leadership through first becoming a *sualibed* to then become an *argar* and eventually a *saila*. He noted that today the *sualibed* position is not viewed with as much respect as it was previously awarded, and often a *sualibed* will remain in the position throughout his life. There is less continuity in leadership development. Leaders elected as *argargan* often have little or no *dule igar* training and minimal experience in *onmaked* processes. Another example of the trend is the recent election of a *saila* in Cardi Suigdup, who is the first *saila* to be elected with no *dule igar* training; he is a retired school teacher and does not chant.

Conversations with leaders of the CGK further reinforced the importance of understanding leadership skills that can support endogenous development of Kuna Yala. This understanding is seen as pivotal to selecting adequate leaders. Soon after our meeting, in late April 2010, the three candidates for the *saila dummad* position to replace Gilberto Arias were announced, and the results of the selection by each community will be announced in November 2010. Kuna leaders and supporters of CGK and CGCK processes are divided on what approach to take to selecting a new leader. Some argue for the need for a leader who is knowledgeable about and skilled in dealing with the government and the external world. Others argue for the importance of knowledge of *Bab Igar* and internal management. At this pivotal time, one reflection group member felt it was important to have an

open, public debate regarding leadership skills and knowledge, and the findings of this research could be an important input into such analysis.

Kuna leaders and communities are aware of the challenge they face in supporting *dule igar* leadership development. Key players in the CGCK are developing an initiative to reconstruct a *dule igar* leadership school. The initiative can potentially supplement *dule igar* training to enhance adaptive potential. What this research highlights, however, is that leadership that can support endogenous development in Kuna communities, and the Comarca as a whole, must both continue to facilitate sound governance processes, and ensure that the complex intermingled nature of community management and administration with new roles and tasks is also adequately supported. If leadership training focuses only on *dule igar* methods, it could create further tensions between the need to have expertise for understanding complex problems, and have wise leaders produced through a lifetime of experience. The example of the reflection methodology used by the Catholic Church in past initiatives to discuss and analyse the stories of the *Bab Igar* in a spoken forum provides opportunity for thinking about how to adapt leadership training to new circumstances.

A fundamental aspect of leadership for endogenous development is being able to harness the tension between conservation and creativity to generate novel solutions; keeping what works from the past while also creatively engaging with the future. A leadership program that can support adaptive capacity in the current context of Kuna Yala must produce leadership that can address these seemingly contradictory collective needs. This is an often discussed concern of many Kuna leaders, and one suggestion by a reflection group member was to build a formal process, through a CGK committee to address the challenge of leadership openly, thus bringing attention to the matter within communities.

10.2.3 Personhood development and transformative change

This study found that the practices through which persons are developed to support collective processes are important for adaptive capacity. Individuals in Kuna communities participate in collective processes both through their unique individual skills and knowledge which are leveraged to produce creative solutions, and through supporting collective mobilisation. Persons are developed to engage

socially using all aspects of their self through personhood development. Personhood development is holistic both because it uses different forms of teaching while it also views the person as an integrated whole. It is based on experiential development of the person as a member of a collective, rather than on the education of the child or student into a certain specialisation.

The insights regarding personhood development are significant to ongoing endogenous development in two important ways. The first is related to the generalised formal education of most children through schooling which is impacting on the practice of personhood development. The EBI program on bilingual education of the CGK and CGCK is making headway in addressing the consequences of a shift in practice. However, beyond the work in formal education, there is a need to work directly with parents and community leaders to strengthen the community involvement in childhood development and education. A reflection offered by CGK leaders on this is that while the EBI program has involved the CGK and CGCK structures, it has not engaged sufficiently with community leaders. Work in the Comarca has mainly focused in schools. As the EBI project funding is running out, one suggestion by leaders is to use future funding opportunities to link education initiatives with wider leadership and development initiatives.

The second way in which the findings concerning personhood development are important today is related to the role of individuals in nurturing an adaptive relationship between the natural and social systems. Personhood development takes place within embedded social spheres that include the natural systems, building awareness of the co-evolutionary relationship of people with the ecosystems. Individuals who are aware of the natural systems they are embedded within support a process of monitoring and evaluation of the relationship of the social world to the natural world. This supports sustainability through receiving feedback from the natural systems that is shared with the collective. Awareness of feedback from the natural systems is fundamental for sustainable decision making.

As cultural practice changes in some Kuna communities, monitoring is less likely to occur organically. In these cases, more formal monitoring systems will be required. Several examples of projects in natural resource management in Kuna Yala, such as the AECI funded project in marine biodiversity, have led to formal monitoring processes that support improved environmental monitoring for

sustainable decision making. CGK leaders reflected on the growth in formal monitoring in Kuna Yala as a positive sign of Kuna ability to build new approaches to ensure sustainability, using epistemological bridge building with science. They also highlighted that formal monitoring should not replace a personal and continual interaction of persons with the natural systems, as this interaction is important for spiritual development.

Another important aspect of personhood is collective identity, which was found to be relational, and is developed through the experience of interacting with collective spheres. During conversations with the reflection group, a discussion emerged on how different communities within Kuna Yala nurture collective identity through retelling of history, leading to variations between community collective identities. For example, Ukupseni and Ustupu are communities that have a strong revolutionary identity due to their direct participation in the Kuna revolution of 1925, which is celebrated annually. The revolutionary identity of some communities is thought to be important in actions that require defence of the territory, such as the ongoing land encroachment issues the Comarca faces. This defensive approach to maintaining self-determination and endogenous development merits further consideration. Accordingly, analysis of the distinction between how communities create collective identity, compared to the process for Kuna living outside the Comarca, could be an interesting avenue for future research into Kuna personhood development.

The analysis also led to findings regarding the role of ritual in personhood development. Apart from building solidarity and identity, rituals develop skills that are important for dealing with individual and collective crisis. Rituals facilitate transformations, and allow a development of skills for deep reflection. The ability to reflect at a deep level facilitates transformative change of individuals and the collective. In the context of endogenous development, transformative change refers to the ability to re-organise in the face of crisis, when current information and approaches are no longer working. Rites of passage such as the *inna* ceremonies support development of the skills necessary within individuals. Collective spaces of liminality are recreated daily through the sacred *onmaked* processes to support decision making which brings about transformative change. The *war uet* ritual is the best example of an explicit use of ritual to overcome a crisis.

289

The role of ritual in facilitating the transformative capacity of individuals and collectives is important when thinking about how to support endogenous development in the current context of unprecedented changes. The realm of ritual and spirituality may at times seem far removed from the highly political decision making of a community, but thinking of them as separate is problematic. Meshing of spiritual and administrative leadership and governance has supported adaptive capacity and endogenous development historically. Rituals such as the *war uet* are used to expel evil spirits, which are the culprits of social imbalance. The impacts that the imbalance or the evil spirits cause can be physical and mental. It follows that the process of engaging in deep reflection to creatively overcome adversity is equally useful for current crises such as a malaria epidemic or dealing with the impacts of climate change. During the reflection group meeting, the role of the *war uet* was signalled as important for dealing with relocation in the face of sea level rise. A collective crisis as difficult as needing to relocate would require sound processes for ensuring that what is most important to the Kuna is not undermined through the adaptive response. This must not be separated from the technology and science that is useful for problem analysis and can support new innovative solutions. The practice of ritual use as a fundamental aspect of decision making in communities such as Ukupseni is rapidly diminishing. The challenge for practice, much like with leadership development, is to bring together sound cultural practice and processes and 'new' forms of knowing and being, into contemporary problem solving.

10.2.4 Networking Practice

The third area of practice that was found to be important for adaptive capacity is Kuna social networking practices. At the community level, the findings suggest that social networks that are the result of organic interactions are self-organising. The natural process of network formation supports adaptive capacity by creating a resilient network. This implies that the chaotic and organic community processes, which have historically facilitated social interactions, continue to characterise the social interactions within Kuna communities. The suggestion from these findings for Kuna practice is that to continue to nurture endogenous development and self-organisation in communities, social relations must remain flexible, with people

participating freely in a variety of groups that are constantly in a state of flux. This seems to be an area of continued strength of the Kuna system today.

The Comarca governance system functions through a meshing of institutional structures and general assemblies for decision making that produce self-organising behaviours. Comarca networks are therefore the result of both institutional interactions and informal interactions with participants (community delegates, support leaders and institutional leaders) around Comarca issues. Unlike the interactions in communities, the networking practices that were analysed at the Comarca level highlight the difficulty of adapting a local, organic process to a regional institutional process. The tensions this creates are of particular importance to the contemporary globalised and interconnected context of Kuna Yala, and illustrate how current trends could potentially impact on Kuna adaptive capacity.

Adaptive and reflexive governance that supports endogenous development requires a balance between institutional goal seeking behaviour and self-organisation. If institutional structures are too rigid or too loose the potential for self-organisation diminishes. The looseness or rigidity can be visualised through networking arrangements. The findings indicate that informal interactions are important for adaptive capacity. The implication for practice is that both formal and informal interaction should be encouraged between the different institutional structures. Recent initiatives that aim to increase the overlap and unify work areas (such as the merger of the two Congress NGOs) are likely to enhance interactions. However, if the main motivation behind such changes is financial (e.g. a joint NGO will have greater leverage power for project funding), there is danger that the quality of interactions the merger produces will not necessarily be supportive of social learning and information exchange. Institutional design at the Comarca level can benefit from more in-depth analysis of how to promote different types of interactions.

Perhaps the most interesting and insightful findings of network analysis are in relation to the practice of networking between scales. This is particularly important in the current context of increasing interconnection between communities and the Comarca and national and global processes. Communities continue to participate actively in the Comarca governance processes through the CGK and CGCK assemblies. The analysis showed an emerging trend towards differentiated participation between the two, and a more specialised approach with delegates

chosen for their expertise. If this differentiated and more issue-driven governance approach continues with the current structures, there could potentially be impacts on adaptive capacity.

While discussing these findings with the reflection group, a new interpretation of Comarca governance was shared by one participant. He argued that consolidation of Kuna Comarca autonomy is ongoing and, as a result, continues to be weak and vulnerable. From this historical approach, the Comarca governance institutions are seen as relatively new social institutions, which are still in development. What this contributes is to highlight the need for a facilitated process for discussing and analysing Comarca institutional design, within the current context of heightened complexity. While this process is occurring, evidenced by the recent fusion of the two Comarca NGOs, some leaders feel that the process was not open enough to encourage analysis of this sort.

A further area of findings came from analysis of networking practice of Kuna leaders outside the Comarca. A number of Kuna leaders spend considerable time in international meetings as indigenous leaders or experts, giving the Kuna an active international profile. The processes that are navigated by these leaders, and positions they hold creates much complexity in understanding their roles and analysing their impacts on endogenous development. The complexity often leads to disagreement on contentious issues, forming opposing indigenous 'camps' internationally, and locally, within the Kuna system. While global development, environmental and indigenous rights discourse that these experts are immersed in is seemingly distant from Kuna Yala, it influences local processes. The complexity framework used to emphasize the importance of self-organisation locally as emergent endogenous development has added to understanding these local – global connections.

The Kuna encourage individual leaders to network outside of the local realm. It is a strategy for ensuring that a maximum amount of information is useful to local decision making. As global indigenous networks are improving the articulation of indigenous demands, and new networks are created to deal with them, the complexity of roles played by internationally active local leaders is ever increasing. Encouraging networking in this global setting requires the ability to ensure that it is not impeding local processes. The findings of this thesis illustrate that for endogenous development, networking supports adaptation as long as it does not

infringe upon the integrity of the local process. Recent discussion between CGK leaders on appropriate ways to monitor the work of NGOs in Kuna Yala, and cases where Kuna leaders have been sanctioned locally for their global participation indicate rising awareness of the tension between local and global indigenous interests and the role of leaders as mediators is increasing. The challenge for the Kuna is to adaptively create social norms and policies that can support networking that enhances the endogenous process long term, and minimises networking that infringes upon local processes.

10.2.5 Adapting beyond the Comarca

Perhaps the biggest challenge to supporting endogenous development in Kuna Yala as a biocultural territory is the reality that half of the population of the Comarca now lives outside of the territory. The implication this has on community practice has repeatedly been mentioned throughout the thesis. Kuna communities and neighbourhoods in the city are not new but, until recently, they have been secondary family residences. Family and property ties in the community have remained important and family members continue to travel between the community and the city. It is still common for many families living in the city to expect income from sale of coconuts they planted on family land, and in return, they contribute to the maintenance of land and other family assets in the community through sending money. In recent years, however, there have been significant changes in the relationship of city-dwelling Kuna to their communities and biocultural territory. In Ukupseni for example, a small number of families that have been living in Panama City for some time have now sold all of their property in the community. They are the first Ukupseni community members to no longer be directly connected to their community. They are no longer obliged to participate in community activities, and have no reason to return to the community, other than to visit distant relatives and friends. The primary residence and interests of these families are outside of the Comarca. This raises interesting questions regarding how they participate in Kuna collective processes.

I have become aware of a growing concern among Kuna leaders regarding their inability to deal with development concerns of Kuna who no longer live in the Comarca, many of them their own family members. To begin with, focusing efforts of the CGK and CGCK in Kuna Yala takes all of their energy. Added to the time

constraint is their accountability to Comarca focused governance. Today, a new form of Kuna collectivity is emerging, expanding the boundaries of the Comarca. Kuna social spaces outside of Kuna Yala maintain social praxis of Kuna individuals and families with collective identity. Many of these families directly support Kuna Yala through sending money to the Comarca and, other interactions with their communities. These spaces, however, are not an explicit part of the Comarca governance scope, the process through which endogenous development is nurtured.

As Kuna Yala, a biocultural territory, is extended beyond the territorial boundaries of the Comarca, new challenges emerge for endogenous development. Endogenous development that can continue to support the self-determination of the Kuna peoples requires the participation of these new pockets of Kuna interest groups, to ensure the maximum creative potential for future adaptations. If the Comarca continues to develop endogenously without the participation of these extended spheres, it runs the risk of missing out on key knowledge. I have often heard leaders in Kuna communities blame city-dwelling Kuna for cultural erosion in the communities. During the summer months when many return to the community, such as youth who are studying in the city, they bring with them aspects of their new social reality. These new aspects become embedded within the social reality of the communities. To understand these new social spheres that are part of the Kuna reality, both within and outside the territorial boundaries of Kuna Yala, the Comarca governance system must creatively adapt. As this is an emergent insight, it was not directly addressed during the research, so I cannot offer any clear answers for how this may be accomplished. What I can suggest is that a much more in-depth analysis of how city-dwelling Kuna participate in the collective would be an initial step to understanding the new emergent Kuna biocultural reality.

10.3 Reflections for Indigenous Development

It is estimated that there are 5000 – 7000 indigenous peoples in the world, making up 5% of the world population (Maybury-Lewis, 1997). This vast diversity of indigenous peoples are found within particular geopolitical, social and economic conditions, and living in different ecosystems around the world. It is, therefore difficult, if not impossible, to make general statements regarding indigenous

development and how it might be informed by the findings of this thesis. In extreme cases, such as in at least 20 countries in the world, some minority groups are in immanent threat of disappearance due to genocide or mass political killing (Minority Rights Group International, 2007). Reflecting on fostering endogenous development for these groups is likely to require a more protectionist or defensive approach and the Kuna case is perhaps of little help.

There are, however, some identifiable common concerns, shared by indigenous peoples across the world to which this thesis on endogenous development can speak. The latest *State of the World's Indigenous Peoples* report, prepared by the United Nations Permanent Forum on Indigenous Issues (United Nations, 2009), illustrates that in all areas of social and environmental development and rights, indigenous peoples face important challenges within Nation States. Some key concerns that are relevant to this analysis include: recognition and protection of collective rights for access to and governance of ancestral territories, respect for cultural and religious practices and expressions as self-determining peoples, adequate representation in national and international processes, and the right to free, prior and informed consent regarding all activities that may potentially impact their lands or communities. The UNDRIP sets the international minimum standards for the protection, respect and fulfilment of the rights of indigenous peoples (Tauli-Corpuz, 2008). Despite this policy framework, the rights and needs of indigenous peoples are not recognised as differentiated in major development assessments such as country *Human Development Reports* (Donato, 2009), making it difficult for states to implement the UNDRIP. Findings regarding endogenous development practice must be understood within this challenging policy context.

Before offering reflections for indigenous development, it is necessary to reiterate the context within which the analysis took place and understanding was gained. The Kuna enjoy relative territorial autonomy within a State. Kuna cultural and social processes that support endogenous development and well-being are the result of a co-evolutionary relationship between the social and natural spheres of the Comarca. Complexity and a CASs framework were argued to be useful to understanding development in general and dynamics of IBCSs, in particular, at the beginning of the thesis. An IBCS was defined as a linked socio-cultural and bio-physical system that contains the collective biocultural heritage of indigenous peoples, produced and nurtured through co-evolutionary relationships within a

specific territory. The concept has emerged from use of a biocultural approach to protecting indigenous territories and supporting self-determination (ANDES, 2009). The findings of this inquiry into an IBCS can therefore provide insights regarding how a CASs and complexity approach may support the goals of indigenous peoples. Three key insights are discussed and related back to the challenges faced by indigenous peoples in the age of heightened complexity.

10.3.1 Questions of scale

Indigenous peoples today face challenges that are related to being interconnected in a globalised world. While it is beyond the scope of this discussion to analyse the impacts of globalisation on indigenous development, it is important to note that they have been analysed in terms of economic globalisation and market forces (Blaser, Feit, & McRae, 2004), impacts on culture (Smith & Ward, 2000), or health (Kunitz, 2000), and opportunities for indigenous networking (Haverman, 2000), among many others. The impacts of globalisation on local realities, and IBCSs are manifold, producing multiple opportunities and challenges.

Some impacts of globalisation that are relevant to the analysis of SESs in general include the following: an increase in connectedness between components; a speeding up of interactions and processes; and, a stretching of processes across scales so that planet wide transformation is now emerging (Young et al., 2006). In general, globalisation is compressing space and time scales with regard to the flow of information, goods and people (Robertson, 1995). Working across scales is therefore a necessity for thinking about local governance. For example, in the climate change adaptation field, scales are increasingly considered in the multiple dimensions of adaptation analysis and implementation (Adger et al., 2005; Vincent, 2007). It is no longer sufficient to work locally without thinking about the global and vice-versa. This is challenging for indigenous peoples as it requires them to link into global processes.

For analysis and interventions in IBCSs, dealing with scale requires analytical tools to help visualisation of the multiple scales within and outside the system. The CASs framework is well suited to dealing with multi-scalar systems. It recognises that the unit of analysis is made up of embedded levels and it is an open system that is interacting with its environment. Kuna Yala, as a nested set of collectives was analysed at multiple scales. Further, the CAS approach recognises that self-

organisation is driven through internal interactions. Recognising emergence within scales points out that while development has largely been promoted as a top-down process, development and resilience in IBCSs emerges from bottom-up self-organisation. The key is to make the cross scale links and vertical integration work to support bottom-up processes. In the case of the Kuna, it has been shown that it is in the role of leaders who are linking into national and global processes that the bottom-up and top-down processes meet. The strategy that avoids a top-down process threatening Kuna endogenous development is to maintain the decision making power in the hands of local communities supporting democratic participatory processes. This is possible within the Comarca where self-governance is enabled.

Globalisation might be connecting the local to the global in more direct and often powerful ways and at a higher speed, but the local still self-organises based on its own interactions. In fact the local scales work at a faster rate, and are able to be creative and flexible in the face of change. This has historically led to having a rich biocultural system that is resilient and continues to support the self-determination of Kuna Yala. For other indigenous peoples this insight can be helpful, so that participation in national and international spaces where knowledge is leveraged and rights promoted is strategically managed to support local self-determination.

10.3.2 Conceptualising self-determination

A complexity approach recognises that any CAS, and therefore any IBCS, is simply too complex to be understood in its entirety. Mental constructs are used to help frame, understand and engage with the complexity of the world (Johnson-Laird, 1983). In top-down development approaches, models that help understand the complex local system are usually foreign models. In this research, the CASs model was used to help facilitate thinking about and working with the complexity and dynamics of an IBCSs. They have led to some interesting insights such as illustrating how the Kuna can both maintain high levels of creativity and diversity and conserve the patterns that emerge across time. The research experience, however, has also shown that they have important limitations, and when the central concern is to support local self-determination then it is important that we are critical of the models we bring to our analysis and practice.

I agree with Glaser (2006, p. 134) that "A clear weakness of the adaptive cycle model is that it views humanity as 'being driven' rather than as capable of reflection and adaptation i.e. of 'driving'." He points out that the adaptive cycle metaphor fails to include the phenomenological aspect of human engagement. This is likely due to it being a research driven conceptual framework that focuses on abstract system dynamics and, as I have argued in an earlier section (Section 9.4.1), it is limited by its ecological starting point.

One of the key findings of my analysis is that the Kuna continue to use their own frameworks, and they have proved to be good tools for enhancing resilience. In the Kuna case, *Bab Igar* is a holistic framework that guides interactions and management for endogenous development. So while metaphors and models developed through research endeavours with CASs are useful in abstract analytical exercises, indigenous cosmological frameworks that are the basis for conceptual models in IBCSs are local contextualised models that can convey meaning behind the interactions (Apgar et al., 2009). They are the product of co-evolution, the pattern of recursion that has maintained the 'sacred postulates', to use Rappaport's (1979) term, and maintains the system's truth value as Bateson (1972) argued. The discussion of the role of the *Bab Igar* and rituals in building coherence across sustainability goals (Section 9.3.4) further illustrates the functional attributes of local cosmological frameworks used together with ritual practice for sustainable development.

The lesson for indigenous development is that while dealing with contemporary problems can require science and technology, and an awareness of global processes, it is the local processes that have facilitated governance traditionally. They have developed over millennia of social and cultural co-evolution with the natural systems. These continue to be useful and necessary. Sustainability scientists and scholars have recently begun to talk about complexity, transdisciplinarity and holistic approaches, but indigenous peoples have been practising them since time immemorial, as have all peoples until recently. This does not imply a return to the 'noble savage' approach, but an appreciation of the sophistication of some local approaches that recognise complexity and use holistic frameworks. To be useful today, they must be creatively adapted to address contemporary challenges. The third insight discusses this process of creative adaptation and working with different knowledge systems, which is a key concern for indigenous development.

10.3.3 Building epistemological bridges

A complexity approach to IBCSs development recognises the need for transdisciplinary and multicultural processes of inquiry and decision making. This necessarily requires working across different knowledge systems. Indigenous knowledge is now recognised by some as a valid and useful system for enhancing resilience, and much progress has been made in understanding and working with indigenous knowledge systems, most notably through the work of Fikret Berkes (Berkes, 1998, 1999; Berkes & Berkes, 2009; Berkes & Folke, 2002; Berkes & Jolly, 2001). However, most of this work focuses on traditional ecological knowledge (TEK), rather than indigenous knowledge systems as a whole, and some recent accounts illustrate that it is common to fall into the trap of comparing TEK to science (Lyver et al., 2009; Moller et al., 2009).

Critique of the dichotomy between indigenous knowledge and science has led some to advocate for hybridization as a useful concept that emphasizes working towards solutions, rather than reinforcing the dichotomy (Berkes, 1998; Blaikie et al., 1997; Ellen et al., 2000; Maurial, 1999). But hybridization does not necessarily deal with the underlying power relations that, if undisturbed, could see work with indigenous knowledge continuing to reinforce scientific and Western progress (Agrawal, 2002; Ellen & Harris, 2000), rather than supporting the goals of indigenous peoples and resilience of IBCS.

Apart from the challenge of finding viable avenues for integrating across knowledge systems, a second important point to note is that when indigenous knowledge is understood only through the limited lens of a foreign (scientific or other) paradigm, then we are likely to miss important aspects of how and why it works. Raffles (2002) argues that indigenous knowledge is local not because it is confined to a locality or scale but because it emerges through the embodied and situated practice of life, it is an 'intimate knowledge'. The how and why of indigenous knowledge can therefore only be fully understood through its practice within IBCSs. As I have argued earlier, when exogenous development brings its own analytical tools, it can miss important aspects, for example, failing to understand transformative change as facilitated through ritual practice and cosmological frameworks. The CASs is a case in point; alone, it fails to explicate an experimental understanding of knowledge.

Considering the two challenges outlined above, several steps emerge as important for epistemological bridge building. First, indigenous knowledge must be understood on its own terms, within its own context, rather than be analysed through a foreign paradigm. This has been done successfully in the field of anthropology, and in the case of the Kuna a notable example is the work of Chapin (1983) on Kuna curing. Only when this approach is taken can the full potential of indigenous knowledge in building resilience, as it has historically been doing in IBCSs, be recognised. At the same time, the CASs framework must be used in a reflexive and critical manner, to ensure that its assumptions are also being questioned and it too can grow from the experience. This would allow a resilience approach to build epistemological bridges in ways that can support indigenous goals of self-determination and endogenous development.

My experience of using a CASs framework in analysis of Kuna Yala as an IBCSs showed that understanding indigenous knowledge through its own processes is a major challenge, and requires appropriate methodologies. As a researcher I needed to have an open mind, and be willing to engage in new and foreign ways of knowing and being, while being critical of my own assumptions. The intentional collective reflection that formed the backbone of the approach taken in the thesis allowed a critique of the CASs framework beyond my own. Adaptation as it was hypothesized to begin with took on new dimensions and levels through the process. If the CASs framework had been applied religiously, these insights would not have developed, as the theoretical tools required to engage in other ways of knowing would be missing. What has emerged is the result of a two way process - indigenous practice and ways of knowing have built onto the CASs framework, and the framework has built onto the Kuna system by providing a new analytical tool. The common ground that was found affirms the initial question that led to undertaking this research, and the choice of using a CASs approach. A complexity approach has supported improved understanding of how endogenous development may be fostered in order to promote local diversity.

The lesson for indigenous development in general is that when engaging in transdisciplinary endeavours it is important that the local knowledge system be understood from within. Using local frameworks to anchor the process seems to be one avenue for supporting self-determination while enabling dealing with complex problems in a globalised setting. Finally, creatively bringing together age old

practice with scientific and other knowledge to deal with contemporary challenges requires skilful leaders and a shared collective identity for participation. For some indigenous peoples, who have lost their ancestral land, and are dispersed within urban settings, with no centralised governance system, this poses a severe challenge. However, the individual and collective skills required to regain self-determination as a people can be found in traditional notions of leadership and personhood. These aspects of culture and spirituality are likely to continue to be an important part of the lives of indigenous families, even in their dispersed settings. Where indigenous peoples continue to use collective processes, there is a need to analyse the role of leadership, the skills that are traditionally developed in them, and to recreate spaces for fostering wisdom. Indigenous leaders today need to be even better at facilitation and dialogue than they used to be, because the complexity of contemporary problems is much higher.

10.4 Conclusion

The chapter has discussed implications of the research findings, through illustrating leverage points for endogenous development of Kuna Yala, and other IBCSs. The reflections for Kuna practice discussed in Section 10.2 were shared with the Kuna through my last field visit in April 2010. Throughout the discussion I have highlighted where these discussions added to my own reflection for Kuna practice.

The challenges the Kuna face are many, but opportunities are also evident. Several ongoing initiatives of Kuna governance are already attempting to address some of the key issues highlighted in this and other work on the Kuna such as the degradation of cultural practice supporting personhood development and leadership development. The key message from this research is that there is a need to creatively undertake regeneration of Kuna practices so that seemingly contradictory behaviours and approaches enable management of the deep paradoxes that complexity and self-organisation uncover. This regeneration must be creative and suited to today's challenging context where Kuna and non-Kuna worlds have become the shared realities of many.

The challenges for indigenous peoples in general are also manifold, and more so in the current age of global change. Some insights from reflecting on use of the CASs and IBCSs approach illustrate leverage points for indigenous development.

Issues of managing across scales, across knowledge types and using multiple models have shown that answers to problems in a complex world are not easily found but, instead, must be nurtured through sound local processes where self-determination is understood through local worldviews.

Final conclusions regarding how this research speaks to my initial concerns about development projects and how they engage with community processes are discussed in the concluding chapter.

Chapter 11

Conclusions

Poor people's lives and realities are emergent, very local, diverse, non-linear and unpredictable. They are adaptive agents. All these concepts from complexity theory are the realities of poor people around the world. Robert Chambers, quoted in (Panos London, 2009, pp. 5-6)

11.1 Introduction

This chapter concludes the thesis by summarising the key findings and then linking them back to the original underlying questions that became the impetus for undertaking research. The journey began through reflecting on development praxis, including my own. I recognised that in spite of development projects using bottom-up and participatory approaches, development, as the attainment of well-being, could only occur through organic processes that underlie specific development initiatives. I undertook this research to help build alternative approaches to development, approaches that can support indigenous peoples' in their quest for self-determination, while also recognising the challenges of living in an 'age of heightened complexity'. I have termed these processes endogenous development. First, I will summarise the key findings of the research, pointing out some limitations. Then, I will conclude by reflecting upon the initial questions regarding development praxis illustrating what has been learnt about reframing development. Finally, I will reiterate how this research adds to several threads that have permeated Kuna scholarship, pointing to areas for future research.

11.2 Research summary and limitations

To achieve the research objectives I took a collaborative approach, making the research an opportunity to facilitate collective reflection upon both praxis and theory. Reflexive, iterative cycles with a Kuna reflection group became the backbone of my methodology, combined with findings from in-depth, qualitative research into Kuna practice throughout time immersed in the field. Emerging from

the process was a focus on three key areas of practice supporting Kuna adaptive capacity – leadership development, personhood development and networking. Each of the three key areas was explored through a chapter of the thesis. The main results presented through these chapters are:

- Kuna governance combines spiritual and administrative spheres of collectivity, using collective memory and dialogical processes to enable holistic approaches;
- Kuna leadership development undertaken through a holistic system has the potential to build adaptive leaders who embody their roles, are reflexive, and are able to facilitate collective dialogue;
- Kuna personhood development emerges out of a holistic process within embedded levels of collectivity, building whole persons that are unique individuals and collective agents;
- Kuna ritual practice supports experiential development of capacity for individual and collective deep reflection and transformation;
- Organic social interactions in Kuna communities produce resilient and adaptive social networks;
- Kuna networking practice supports cross-scale interactions within Kuna Yala and beyond, and in today's globalised world indicate a need to be more aware of how networking can support endogenous development processes.

The findings regarding Kuna practice combined for holistic understanding of adaptive capacity and endogenous development. Three key areas of contribution of the thesis were presented in Chapter 9, in summary:

1. A model of Kuna adaptive capacity enables a view of underlying processes that form 'shadow spaces' and contribute to adaptive management. Further, the model contributes to understanding of how indigenous knowledge systems manage transformations through ritual practice.

2. The findings regarding Kuna governance further understanding of reflexive governance and endogenous development by illustrating how socio-cultural practice including use of collective memory, dialogue, reflection and ritual foster transdisciplinarity and management of sustainability goals across scales of time and space.

3. Reflections on use of a CASs framework illustrate the importance of using local frameworks for understanding well-being to enable a whole system view. Moreover, the Kuna use of ritual for transformative change illustrates the need for recognising true uncertainty and a role for creativity and wisdom in fostering adaptation and transformation.

Use of a CASs framework to build understanding of key processes for fostering adaptation and self-organisation of an IBCS has enabled a focus on the deep paradoxes that complexity unveils. It has also, however, been a challenge to the research process as it has required a multi-scalar and multi-disciplinary approach. Multiple scales of Kuna collectivity were analysed throughout 10 months of field work. A difficulty in undertaking inquiry with holistic aims within a PhD process is the time required to sift through the multitude of processes in order to visualise patterns that emerge at different scales. As a consequence, some aspects of practice that were found to be important were unable to be analysed in sufficient depth to enable deep understanding of their experience. For example, in Chapter 7 I noted that further involvement in ritual practice would have enabled a deeper understanding of how transformations are fostered. Similarly, the emergent insight regarding how different communities nurture collective identity point to a limitation of focusing on two communities in Kuna Yala. Future research can pick up on these findings regarding patterns across the whole system to enable a deeper understanding of the experiences of adaptation and transformation.

I have focused on socio-cultural processes, chosen as a fruitful avenue for furthering our understanding of how linked socio-cultural and bio-physical systems can be managed for sustainability and resilience. I have consequently not undertaken analysis of the bio-physical processes that are occurring in Kuna Yala. Current conditions of global change are impacting upon the environment of Kuna Yala, for example through sea level rise and bleaching of coral reefs. Understanding these changes would be useful for obtaining a fuller picture of resilience of socio-cultural and bio-physical systems, and illusrate physical threshold and leverage points. This is another fruitful avenue for future research. What this thesis has shown, however, is that this should be done in a collaborative manner, where possible using local inquiry methods combined with cutting edge research methodologies, ensuring that local cultural framework guide understanding of the bio-physical world.

11.3 Reflections for Development Praxis

To conclude, I now return to my original questions regarding development praxis. Due to the contextualised approach I took to understanding how complexity supports thinking about and implementing endogenous development it is impossible to offer concrete recommendations for the general practice of development agencies. I could potentially produce a list of tentative recommendations based on my findings, but by doing this, I would be concluding the thesis at odds with one of the key insights of complexity. The world is unpredictable, and within the pandemonium of global and local interactions, every local context is undergoing its own process of endogenous development. There can be no 'one-size fits-all' solution to engaging with endogenous development. What I can share, however, are insights that provide opportunity for reflecting critically on the praxis of development, so that those engaged in the development 'industry' might find ways to move closer to a form of development that supports the self-determination of indigenous peoples.

The 'project of development' undertaken through mainly exogenous agents, funded via multilateral or government processes and facilitated by NGOs has changed much since its imperialist past. Since the Rio Earth Summit, for example, development agencies have a stronger focus on interlinked human and environment systems, and the participatory development wave of the 1970s and 1980s has led to a commitment to respecting and supporting local needs. I argued at the beginning of this thesis, that these changes, while positive, have often developed an either/or approach to bottom-up or top-down development, and indigenous peoples and their knowledge systems continue to be undermined by mainstream development. In the current age of heightened complexity threats to biological and cultural diversity require a more nuanced and networked approach that can link the local to the global. Complexity theory offers analytical tools that can help build such an approach to development. If international development as a practice is to support endogenous development, it requires a paradigm shift from a mechanistic worldview to a complexity worldview. This thesis has shown that the shift can be facilitated by recognising that endogenous development emerges out of local processes, while simultaneously engaging with the interconnected nature of the global system.

I am not alone in proposing that complexity is a useful vehicle for improving development theories and practice. A recent Working Paper of the Overseas Development Institute (Ramalingam, Jones, Reba, & Young, 2008) outlines several contributions of complexity science for dealing with international development. It points out that complexity offers a reinterpretation of real world problems, challenging reduction and induction, providing rigour and legitimacy to embrace 'messy realities'. Complexity is offered as both qualitative and quantitative methodology to help understand complex phenomena and make better decisions in development projects. The methodological contribution of complexity has been furthered in this thesis. The CASs approach has proven to be useful as an analytical tool for gaining insight into key leverage points in local systems, especially through its openness to being informed by local processes and knowledge systems. While I have focused on qualitative analysis of the processes that support self-organisation in collectives, emerging quantitative approaches to analysing complexity, such as agent based modelling (e.g. Bonabeau, 2002; N. Gilbert & Bankes, 2002) and social network analysis (Carrington, Scott, & Wasserman, 2005) may also be useful.

Development practitioners are also beginning to explore how complexity might inform their practice through: on-line discussion groups such as the Pelican Initiative (Pelican Initiative, 2010); blogs, such as Aid on the Edge which is administered by the lead author of the working paper mentioned above (Ramalingam, 2010); and, conferences and workshops such as those hosted by consulting agencies (e.g. Mokoro, 2010) or the recent 'Innovation Dialogue on Being Strategic in the Face of Complexity' hosted by Wageningen University and Research Centre (IDP, 2010). By following these discussions it becomes obvious that while there is enthusiasm regarding complexity as a new approach, there is still much confusion about how it is most useful. For example, recent posts on the Pelican Initiative discussion group illustrate that there is some disagreement as to whether it is possible to classify problems of development as simple, complicated or complex. Further, if this distinction were possible, and some argue it is, there are concerns over a move towards more and more complicated, or complex, solutions which demand much time and energy, when simple solutions might in fact be adequate. Some propose that the way through the simple vs. complex dichotomy is to focus on understanding system dynamics in order to figure out at what particular

stage a system is found in. For example a system may be in a state of relative stability or in a phase of re-organisation. Accordingly, by knowing the system state, interventions can be more effective. This approach shares much with the way resilience theory is applied in resource management, and as I argued in Chapter 9, it misses the key point of complexity, which is that complex systems are inherently unpredictable.

What this thesis has shown is that embracing complexity requires a deeper shift. For development, this ontological shift comes in recognising that development leading to well-being and sustainablity is the result of local system dynamics, and development as an industry necessarily stands outside that process. The integrity of the endogenous nature of the process must be respected. This does not, however, render development funding and practice irrelevant, but rather, it realigns it with broader societal goals. Development projects and aid are important players in supporting local self-determination, but they *are not* the central player. This requires critical reflection on development practice and the theories that underpin initiatives by development practitioners. As one development practitioner put it:

> ….we need to generate more critical thought to grapple with complexity, not to be able to master it, but to act purposefully within it (ala Checkland, Burns and others). The frames of reference from which we approach change need to be shaken up and examined, continually. Time needs to be spent in development interventions and organisational change processes on 'complejizando'—literally reflecting on multiple complexities in order to 'concientizarnos' about different ways of seeing and reacting to the world. A simple solution may emerge, but the process may be just as important as the solution. (Ortiz Aragon, 2010)

I have quoted this participant in the Pelican Initiative dialogue on complexity because his words encapsulate the central argument of this thesis well - dealing with complexity requires a process that is critical and adaptive and, focusing on the process will enable solutions to emerge. This research and my work with the reflection group is an example of an initiative that has focused on understanding the messy real life processes of endogenous development, in order to seek purposeful actions to intervene in it.

Before planning an intervention, development agencies must take time to understand the processes that lead to endogenous development, rather than focusing on the goals of development through their own perspectives. Through greater understanding and respect for process, the local and the global can be brought together, all the while listening and remaining open to new emergent forms

and solutions. There is little evidence, thus far, that a re-organisation to align development goals with local processes is underway in aid and development agencies. Through analysis of the role of Kuna networking and participation in international forums through NGO structures the challenge that communities face in not allowing top-down processes to undermine endogenous development has been clearly illustrated. Development agencies can take more responsibility for how they contribute to or infringe upon endogenous development once they are aware that development that can meet current world challenges must take its lead from local processes, all the while being aware of interconnectedness and complexity.

11.4 Final Thoughts

At the beginning of the thesis I spoke of the long line of scholars in whose footsteps I follow in working with the Kuna. A question that will no doubt be asked by those interested in scholarship on the Kuna is how has this thesis contributed to the remarkable body of literature on the Kuna that already exists?

Some of the key themes that have been identified over the years of scholarship have become central aspects of my analysis of Kuna Yala as a biocultural system. The paradoxical nature of complex systems and their evolution have shed light on the seemingly contradictory roles of leaders, first described by Howe (2002) and built upon by Martinez Mauri (2007). Complexity shows that development and sustainability of an evolving living system requires ambiguity in leadership and contradictions in collective behaviours. It is precisely because Kuna leadership and personhood development has nurtured these aspects of individual and collective expressions that they have persevered, and creatively nurtured their own process of development.

Another theme that has permeated Kuna scholarship is the use of networking practice. Holloman (1969) first discussed the role of networks in Kuna adaptive capacity, and this research has added to this a view of organically fostered interactions creating resilient social networks. Martinez Mauri (2007) later discussed the role of networking leaders in Kuna development, and this research has added another layer of analysis of networking in a context of globalisation. From a complexity perspective, networking is pivotal, and the more 'aware' the Kuna are of the different types of networks they are engaging in, the better able

they will be to find the balance between networks creating unavoidable but controllable vulnerabilities, and networks that weaken their ability to govern from within.

I will refrain from making any sweeping judgements on the predicted future trajectory of the Kuna. As I have said repeatedly, there is no doubt that the challenges they face are great, but this thesis has illustrated that there are opportunities. The opportunities that have been highlighted, and were discussed at length in Chapter 10 relate to the three key practices found to be central to fostering endogenous development – leadership development, personhood development and networking. In each of these, opportunities arise from taking a close look at how the Kuna have historically managed their collectives, through blending spiritual and administrative governance and maintaining a central role for ritual practice and how they creatively adapt their ways to deal with new challenges. Today, ongoing Kuna initiatives such as the EBI bilingual education project and plans for a leadership development school can be informed by the findings of this thesis, to build appropriate processes to strengthen the system where it is weakened, and to tailor practice to the new challenges of supporting self-determination in a globalised world.

Most of the research conducted with the Kuna to date has focused on community and governance processes within Kuna Yala, and I have added to this scholarship. One of the biggest challenges the Kuna face today is an expansion of the Kuna world beyond the Comarca. My reflections on use of an IBCS approach to understand endogenous development has led me to indicate in Chapter 10 that today, it is necessary to look beyond the territorial boundaries of Kuna Yala, to understand how the Kuna are re-creating new spaces for dialogue and governance. The work of Martinez Mauri (2007) included analysis of Kuna processes as far away as Geneva. Future Kuna scholarship must continue this trend, to include spaces outside of Kuna Yala. No doubt this new scholarship will add to some of the questions that emerge from this research regarding notions of territoriality, identity and social practice of indigenous peoples within an interconnected world.

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Appendix A - Glossary of Kuna words

Absoget	War uet ritual specialist. Literal translation is "converser" as the ritual requires conversing with the spirits. The verb absoget also means to read.
Anmar	Plural possessive, our
Anmar Danikid Igar	Literally it means The Story of Where we Come From. It is an alternative name for Bab Igar
Argar (pl. argargan)	Advisor to chief and village governance system, also referred to as the chief's translator or spokesperson because of their duty in relaying the chief's chants in spoken language
Bab (a)	Father
Bab (a) Dummad	Great father, the Kuna male deity
Bab Igar	Father's Way, the name given to the compilation of stories that make up the Kuna collective memory.
Balu Wala	Name of a Kuna NGO running a marine resource management project. The name refers to a story of the Bab Igar about the tree of salt (balu means salt and wala indicates a tree)
Boni (pl. bonigana)	Disease or problem.
Burba	Spirit. All beings have burba in the Kuna worldview.
Dad (a)	Grandfather and sun
Daniki	From the verb to come, infinitive form is dage
Diwar	River
Dule	Person, also used when referring to themselves as Kuna
Dulegaya	Kuna language. From the words dule and gaya which here means language, but also means mouth.
Dule igar	Literally the Kuna way or path, referring to a traditional practice
Dummad (pl. dummagan)	Large or superior. Used to refer to high ranking positions. For example saila dummad is the higher chief. Plural also used to refer to leaders collectively.
Durdake	To learn
Durdasa (pl. durdasmala)	Past tens have learned or learnt
Gabaryai	Mother of Ibeler, from story of Bab Igar.
Gabur	Hot red chilli pepper

Gaed	Catcher – from the ver gaed, to cacth
Gammu burwi	Kuna dance, gammu is the panpipe instrument used and burwi means little and multiple. The dance requires several gammu.
Gandur	Master of the inna ceremony. From the word gammu, the panpipe instrument he uses, which also means throat.
Gandur igar	The way of the gandur, the chant that of the gandur used during the inna ceremony to facilitate the ritual
Garpa	Woven basket
Garpa sed	Basket holder – apprentice to an inadulet
Gaya	Mouth or language
Ginnit	The colour red.
Gurkin	Hat, also used to refer to mental capacities children are born with
Ibeorgun	Kuna prophet who taught collective organisation and governance. The onmaked nega is also referred to as Ibeorgun nega (Ibeorgun's house).
Iet	Female inna ritual specialist who is responsible for cutting the girls hair
Igar or igala	Path or way, used to refer to a story, a treaty or a practice that is chanted by a saila or other ritual specialists. Has other meaning in governance such as meeting or decision, among others.
Inmar	Things
Inmarwisit (pl. inmarwismala)	He who knows things – ritual specialists
Ina	Medicine
Inadulet (pl. inadurgan)	Specialist in botanical medicine
Inna	A fermented drink made from maize and sugar cane juice that is prepared for the coming of age ceremonies of young women.
Inna mutiki	The first of the inna ceremonies. Mutik means night, and here it is used to refer to the length of the ceremony, as one night, or one day.
Inna nega	The building in which the inna rituals are performed. In some communities it is the same building used as the onmaked nega that is converted into an inna nega.
Inna saila	Leader responsible for organising the inna ceremony and facilitating its performance
Inna suit	The second of the inna ceremonies. Suit means long and here is used to refer to this being the longer ceremony.
Masar	White cane
Masar dule	Funeral specialist who chants the way of the cane

Mergi	American or European (who are presumed to be white), distinguishes between latino descending foreigners who are called waga and are thought of as the colonisers
Mor (or mola)	Clothing. Also used to refer to the female blouses that are hand made from elaborate reverse appliqué and are sold as artisan goods.
Mor Ginnit	Name of group that re-enacts the events of the 1925 revolution during the yearly commemorating festivities. Mor is means clothing, and Ginnit means red – the name literally means red clothes, the attire used by the heroes of the revolution
Muu	Grandmother, also used to refer to midwives
Muu igar	Curing chant used to overcome difficulties in child birth
Nainu	Farm, an area of the forest where primary forest has been cut and crops have been planted
Nammakaled	From the verb to sing or chant, used as the adjective singing
Nan (a)	Mother
Nan Dummad	Great mother, the Kuna female deity also known as mother earth
Napa	Soil or ground
Nainu	Farm land
Nega	House
Neg nussukwa	Secondary forest, areas that are fallow
Neg serret	Primary rainforest, land that has not been used for agriculture in living memory
Nele (pl. nelegan or nergan)	Seer - is able to interact with the spirit world and uses spiritual powers to diagnose disease.
Nika	From the verb nikue, to have - has
Nuchu	Wooden dolls used in ritual and curing ceremonies. Life size dolls are used in the war uet ritual while smaller nuchu are usually kept in houses and when they are given burba, spirit or life by the nele they are able to fend off evil spirits and protect the owner.
Olo	Gold
Olodule (pl. olodulemar)	Golden person that is a term used to refer to the Kuna as the chosen ones to protect Mother Nature.
Onmaked	Collective gathering for prayer or decision making. When used as onmaked system in the text it refers to the collective governance system based on the onmaked nega processes

Onmaked Dummad Nammakaled	The Kuna General Cultural Congress – the cultural and spiritual governance structure of the Comarca
Onmaked Dummad Sunmakaled	The Kuna General Congress – the administrative and political governance structure of the Comarca
Onmaked nega	Gathering house – large building that is the central point of village and social life and was used as a metaphor by the prophet Ibeorgun when teaching collective organisation
Sabdur	*Genipa americana* of which fruit with black centre used for rituals and dying
Sabdur guanet	Ritual specialist who collects the sabdur for the yaagwa sergusa ritual
Saila (p. sailagan)	Chief – Kuna spiritual and political leaders
Saila dummad	The Kuna high chief of the Kuna General Congresses
Sapingua	Young man
Sapin dummad (pl. sapin dummagan)	A term used in some communities to describe leaders who participate actively in onmaked nega and are good at speaking publicly. In some communities, such as Ustupu, they are a part of the formal structure of the community. This is not the case in Ukupseni or Colebir where the term is not as commonly used.
Sikwi (pl. sikwimala)	Literally means bird. It is used to refer to leaders who support collective processes. Originally these were secretaries that were necessary when the Kuna first started liaising with national governments and they required translators. Today, the term is used to refer to secretaries of the Congresses (official positions) and professionals who are called in to support but have not decision making powers.
Sikwi gaed	Midwife also known as muu
Sualibed (pl. sualibmala)	Carved stave holder or village policeman, supports community governance system
Suga	Crab
Suggaed	Crab catcher - Female ritual specialist that supports the puberty rites
Sunmakaled	From the verb sunmake to speak, the adjective spoken
Sunnad (i)	Authentic or real
Surba	Small enclosure made of *Calathea insignis* leaf inside a house and is used to isolate patients receiving medicinal treatments and during the yaagwa sergusa initiation step of the coming of age ceremony for young girls

Ukkurwargan	Large carvings made from balsa wood used in the war uet ritual
Waga	Latino or foreigner, also the name used for the colonising Spanish
Wala	Trunk or wood. When compounded with a tree name it indicates a tree.
War	Tobacco
War saed	Ritual specialist who blows tobacco smoke during the inna ceremony
War uet	Collective ritual that involves tobacco smoking, also known as neg absoget.
Yaagwa	Maiden
Yaagwa sergusa	When a young girl passes menarche she is known as a yaagwa until she is sexually active or married

Appendix B - Permission Letter Granted by CGK

Panamà, 11 de enero de 2008.

Señores
Sailas de las Comunidades
E.   S.   M.
Estimados Sailas:

La presente es con la finalidad de comunicarle que la señora Jane Marina Apgar,

cuenta con el permiso del CONGRESO GENERAL KUNA, para poder estar en nuestras

tierras realizando trabajo de investigación para su Doctorado de la Universidad de

Lincoln de Nueva Zelanda.

Por lo tanto mucho se les agradece su cooperación con la señora.

Agradeciendo de antemano por la atención a la presente quedo de ustedes.

Atentamente,

GILBERTO ARIAS   INOCENCIO MARTINEZ
Saila Dummad   Saila Dummad

ANIBAL ESCALA   GERMAN HERNANDEZ
Saila Dummad   Secretario General

Appendix C - Page of Field Notebook

*Role of dialogue!

Colchar 15 July Approx. 30 participants

Comcaren nega => saila first discusses the locality of _____ = someone swept them near never dominant.

- This leads to conversation regarding someone's farm on the way - the iagua is not doing well.

- Links to conversation about the need for more iagua use - a note from Mauunidup is coming. Then on to the topic - how many houses need to be built this year and how urgent are they.

- (Reflection) on the role of collective house building through different opinions - for one it is not fair that they have to build Crispio? another house - for others it is not questioned.

(vertical margin text) Levels of conversation? and goal

Appendix D – Example Interview Guide

Leaders – Inadurgan

Ukupseni/Colebir

- When did you first start learning ina? Why?

- Did you feel your role in the community has changed now that you know ina? How so?

- How many different types of ina do you know? Which ones and why those ones?

- How many are you studying currently? Are you likely to study more in the future?

- How do you choose your teachers?

- Tell me about how you learn? The process? Are there phases? How long does it take? What exactly does it involve?

- How much interaction do you have with the teacher?

- What advice did/does your teacher give you?

- Do you follow the advice?

- Are you involved in the community in any other way? In a committee? Regularly attend onmaked nega?

- Would you like to teach ina? What must you do to be ready to teach others?

Appendix E - 1st Workshop with Reflection Group

Date: 26 May 2008

Venue: Salon Boquete, Hotel Roma Plaza, Panama City

Participants: 9 members of NEGA

Description of Activities

5:00pm – 5:15pm – Introduction
The workshop opened with a brief introduction on the research project to ensure that the all participants were aware of the research interests, and the objectives of the current workshop. Two members of NEGA were participating in the reflection process for the first time thus requiring further explanation of the main research interest. This also allowed other members of NEGA who had already engaged in some dialogue regarding the project to clarify their understanding of the concepts of adaptive capacity and endogenous development, and how they relate to their work/interests. Further, the general methodological approach of systems and action research was also made explicit at this initial stage, reiterating the role of the reflection group in building collective understanding and conceptual clarity.

Presenting the conceptual model

5: 15pm – 6:30pm – Presentation and Discussion of Conceptual Model
I opened the second activity of the workshop by presenting the model of characteristics that affect Kuna adaptive capacity (Figure 6 in the thesis), explaining how I had come to develop the model through literature review and my own previous experience. This led onto a discussion regarding different aspects of

the model. Initially, we discussed how to define the 'system' of Kuna Yala, which offered opportunity to further discuss the IBCSs approach and how this relates to other theories of linked social-ecological systems. Then, we discussed each of the characteristics in turn. Participants offered their view of each, how they interpret it, whether they feel it is important for adaptive capacity and if so how. Throughout this discussion the group continued to reframe their understanding of the concept and practice of adaptation in the Kuna context.

Discussing key characteristics

6:30pm – 7:00pm – Discussion on the Role of Spirituality
The discussion regarding adaptive capacity led onto a discussion focused around how spirituality relates to the model. As this was a key area of concern for developing the conceptual model, due to my initial lack of clarity on the Kuna spirituality, I made sure to take notes and listen carefully to the different views and to ask leading questions to enable a better initial scoping of the role of spirituality in adaptive capacity.

7:00pm – 8:00pm – Dinner and Wrap up Discussion
While dinner was served, the discussion continued, and focused on what aspects of the model require further in-depth analysis in communities and through other Kuna processes. The participants were particularly helpful in highlighting the best approach to developing a deeper understanding of the processes, such as through suggesting key leaders to interview or indicating meetings of development projects they are involved with in which these practices could be further analysed.

Appendix F - 2nd Workshop with Reflection Group

Date: 13 August, 2008

Venue: Salon Boquete, Hotel Roma Plaza, Panama City

Participants: 6 members of NGO NEGA, 1 emerging leader and new member of NEGA and 1 CGCK leader

Description of Activities

5:00pm – 5:15pm – Introduction

I opened the workshop with an introduction and an overview of the research project, the central focus and the progress made to date, mainly for the benefit of the CGCK leader who had not participated in the reflection group prior to this event. Participants who had been involved in the reflection process prior to this event shared their interpretations of the research goals and the progress made to date. I outlined the objectives of the workshop as the final formal reflection event during the field work period, providing an opportunity to discuss emerging conceptual clarity and holistic understanding.

CGCK leader and participants listening to introductory discussion of other participants

5: 15pm – 5: 45pm – Guided discussion on Conceptual Development
I used Figure 6 that was the original conceptual model together with the most developed mind map (Figure 8) to guide a discussion regarding the depth of conceptual understanding that had been gained around the key research questions. During this discussion I aimed at illustrating my understanding of collective learning to date, including my own reflections and findings from the ongoing in-

depth inquiry that I had been conducting throughout the field work. There was opportunity for participants to ask questions to further clarify identification of enabling conditions for adaptive capacity, skills, knowledge and practices that influence their creation and finally, underlying processes. Further, participants offered their own interpretations, illustrating convergence and disagreement with my understanding.

5: 45pm – 7:00 pm – Facilitated discussion on Emerging Findings
During this third part of the workshop I used three key questions to facilitate a conversation to help identify holistic interpretations from our collective reflection. These are:

- What are the levels of Kuna collectivity and how do they interact with each other?
- Is it best to approach the issue of the system's current adaptive capacity from the perspective of continued processes of adaptation or from weaknesses in the system showing failure or breakdown in certain processes or parts of the system?
- Are current examples of adaptive responses more in line with adaptive management processes or longer term or deeper processes?

Framing the discussion through key questions

The discussion focused around key themes of relevance for bringing together the findings from the different parts of the reflection process and in-depth inquiry. Several key points that emerged include:

- The challenge and necessity of undertaking analysis at multiple levels of collectivity
- Emergent understanding of the role of ritual and spirituality leads to the conclusion that Kuna adaptive capacity is able to facilitate change at a deeper level
- Understanding adaptation requires an understanding of long and short term goals and objectives.

The president of NEGA engaging in the discussion

7:00pm – 8:00pm – Dinner and Wrap-up Discussion
The discussion of holistic interpretations continued through dinner, focusing on key learning that can potentially influence the practice of development in Kuna collectives. This part of the discussion was particularly interesting for the CGCK leader who participated. Several ongoing initiatives, such as the leadership development initiative were discussed; highlighting learning that could be fed into their practice. Finally, the workshop ended with a short discussion on areas of learning that could lead to the development of joint publications in local and international fora. I clarified that while the field work period of the thesis work was coming to an end, conceptual development would continue through communication via email, and potential future field visits.