Cacao: A Cultural Keystone Species among the Kuna
of Three Communities in San Blas, Panama

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Abstract

Customary uses of *Theobroma cacao* among the Kuna have narrowed as a result of large-scale livelihood transition, cultural change, and the diffusion of pathogens from South America that attack the tree. Rather than locally producing the dried cacao beans, used as a fundamental element of the most important Kuna ceremonies, most locals are now purchasing beans from outside of the reserve at restrictively high prices. As a result of production-displacement and the lower quality of imported cacao, Kuna elders describe the suite of ways in which most of the contexts where cacao is used have endured despite a progression towards economic dependency and cultural change among the Kuna. Cultural Keystone Species Theory (Cristancho and Vining, 2002; Garibaldi and Turner, 2004) suggests that certain plants play outstanding roles in human cultural systems and that their disappearance can have adverse affects on a local culture. Based on this theory, using participant observation, semi-structured and informal interviews, my study sought testimonials from local people regarding the locally changing status and availability of cacao across three communities located in the Cartí region of Kuna Yala, Panama.

Key Words:

Cacao, Culture, Indigenous Peoples, Kuna, Panama, Plants, San Blas, *Theobroma cacao*

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The people of *Mulatupu*, *Myria-Ubgigandup*, and *Molakedup* have made many concessions in order assure that Domingo and I felt welcome; they opened their families, their communities, and proudly shared their deepest concerns and stories. For this, I am eternally thankful, and optimistic that future generations will both be able to hear the wise words of their ancestors, and critically assess the way that Domingo and I have interpreted these words.

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Chapter 1 – Introduction

1.0 Beginning

While it has been widely recognized that indigenous peoples and their cultures support the continued existence of the most vulnerable ecosystems on earth, it is also increasingly clear that the plants and animals in such systems support the dignified and integral cultural identities of these same peoples. (Cristancho 2004; Garibaldi 2004; Jochim 1981; Lizarralde 2004; Maffi 2001; Stevens 1997) Acknowledgment of this reciprocal relationship has motivated research linking the cultural survival of indigenous peoples to the integrity of their corresponding ecosystems and certain local species. (Cristancho 2004; Garibaldi 2004; Nietschmann 1988; Patrick 2004; Steinberg 1998, 2002a, 2002c, 2002b) Local plants and animals often play significant roles within indigenous cultural systems. (Gomez-Pompa 1990; Howell 1998; Turner 1988; Ventocilla 1995; Ventocilla 1997) For example, the significance of such species as *Theobroma cacao*, red maize, and coca, found in the tropical rainforests of Latin America, extends far beyond ‘economic value’ in the context of local cultural systems where they support the ceremonial, ritual, and social functions that narrate local cultural identity. (Cristancho 2004; Sandstrom 1991; Steinberg 2002a, 2002c) For a number of reasons the relationships between indigenous peoples and local species have undergone dramatic changes. (McSweeney 2002; McSweeney 2007; Nabhan 1994; Rival 1998; Zent 2001) If these plants are indeed so important in the construction of cultural identity¹, this changing relationship is of particular concern to those who are interested in the cultural survival of indigenous peoples.

¹In this context, culture is considered the ‘collective way in which people live their lives’ whereas social identity is considered a self-image that is constituted through multiple aspects of gender, religion, age, and ethnicity, etc...

These concerns are clearly expressed by many scholars who describe the numerous levels at which local species are important for a particular cultural group. Bernard Nietschmann (1988) expresses great concern about the social, cultural, and economic consequences of disappearing Green Turtle populations among the Miskito of Nicaragua. Garry Nabhan (2001) describes the ecological and cultural value of Ironwood for the Sonorans, suggesting that its loss will have deep consequences for local people. While Cristancho and Vining (2004) propose that government intervention in coca agriculture among the Letuama, could have “catastrophic” cultural repercussions for local people, and compare its role to that of a “keystone species” in an ecosystem. (Cristancho 2004:161) Although these studies involve detailed description of the important cultural functions played by these species, they tend to omit local perspectives of the ways in which species loss affects local culture.

1.2 The Case of Cacao

Theobroma cacao is of particular cultural importance to many indigenous groups throughout Central America. (Barnes 2005) The following quotation from a Christian missionary to Central America in 1720 illustrates how integrally cacao had been woven into local culture at that time:

The cocoa-tree supplies the Indians with bread, water, wine, vinegar, brandy, milk, oil, honey, sugar, needles, thread, linen, clothes, caps, spoons, besoms [brooms], baskets, paper, and nails; timber, coverings for their houses; masts, sails, cordage for their vessels; and medicines for their diseases; and what can be desired more? (Mather, quoted in Ruppert 2001:45)

Theobroma cacao, often referred to as ‘cocoa’ or ‘cacao’, is best known as the ‘chocolate tree’. (Young, 2007) Indeed, soon after the arrival of Spanish settlers in the

New World, cacao became an important and globally traded commodity used in the production of chocolate. (Jamieson, 2001) However, cacao also has a rich pre-colonial history of medicinal, ritual, and dietary applications among the indigenous groups of Central America. (Dillinger 2000; Bergmann 1969; Gomez-Pompa 1990) Among the Kuna of San Blas, Panama, cacao is called *siagua*² – a tree whose story begins with a beautiful and clever young woman named, *sianele*. According to Ruben Tejada, from the community of *Myria-Ubgigandup*, the word ‘*siagua*’ can be deconstructed into its linguistic components of *sia* – referring to cacao – and *yagwa* – referring to a young woman. This encodes the belief that a mythological character named *sianele* (literally; cacao doctor) possessed the unsurpassed ability to reinstate lost souls - an affliction that is deemed responsible for most sickness among the Kuna. (Chapin 1983) Eventually, *sianele* became the *siagua* tree, whose fruit was meant to protect, nourish, and heal the Kuna. Through its ceremonial applications *siagua* is mobilized as a negotiator, protector, and curer, while it is also consumed in revitalizing beverages, used in medicines, and prized for its dermatological properties. (Barnes 2005)

1.3 Chapter Outline

In this chapter, I introduce and set out the logical sequence of the following chapters as they relate to my central research objectives. I begin with an explanation of how I became interested in the cultural importance of cacao among the Kuna, briefly outlining its multiple cultural applications, as a way to contextualize the central research objectives of this thesis. I then sequentially introduce the individual chapters of this thesis, which

² The generic word for cacao: From now on *italicized* text refers to words of *Dulegaya* (literally: Kuna talk, or Kuna language), and occasionally of Latin, origin. (see Appendix 1 for Glossary of Kuna Terms).

include theory, methodology, results, and finally, discussion. In this thesis, I aim to investigate the use and cultural significance of cacao in terms of whether it can be considered a ‘cultural keystone species’ among the Kuna of three communities in San Blas, Panama.

1.4 Past Research

In 2005, I was invited to carry out an ethnobotanical research project on the use and cultural importance of the domestic cacao tree as part of a larger project intended to revitalize the cultivation of this tree in *Ukupseni*, an indigenous Kuna settlement in Panama. In this capacity, I documented the varied cultural values of cacao through participant observation and interviews with 30 respondents over a period of six weeks under the sponsorship of McGill University, La Fundación Dobbo Yala (FDY), and the Smithsonian Tropical Research Institute (STRI). I found that most uses of cacao could be roughly divided into eight categories: pregnancy, birth, healing, protection, socialization, cosmetics, curing and death. As the following table, Figure 1.0 (Page 5), illustrates, activities such as burning cacao beans during rituals, and use in the daily preparation of revitalizing, beautifying, and protective mixtures, speak to the unique importance of this tree.

In the study, I found that cacao is not only used in a diversity of contexts (see Figure 1.0), but that its role within those contexts is of fundamental importance. In terms of curing³, spiritual protection and ceremonial uses, cacao acts as an agent that negotiates relationships between the Kuna’s *neg berbaled* (human world) and *neg sanaled* (spiritual world) (see Figure 1.1 for images illustrating Kuna Cacao Use and Spiritual Belief).

³ Curing often involves the resolution of disease and realignment of spiritual forces (see Chapin, 1983).

Curing, ceremonies and spiritual activities for the Kuna invariably involve communicating with non-human others that can influence the wellbeing of Kuna people.

Cacao is often compared to a space-shuttle or a cellular telephone for its ability to

Figure 1.0: List of Distinct Cacao Uses

Use Number	Dulegaya	English
1	<i>bunor mer serkuet</i>	Birth ceremony
2	<i>muugi kuichit siagua ina gobet</i>	Beverage for pregnant women
3	<i>sichi guanet igar</i>	Puberty ceremony
4	<i>inna suet</i>	Strong drink ceremony
5	<i>Siaguanis</i>	Daily cacao beverage #1
6	<i>sugar oliqua</i>	Daily cacao beverage #2
7	<i>sia igar</i>	Way of the cacaos curing song
8	<i>Madun</i>	Daily cacao dessert
9	<i>wuagar magetgi</i>	Cacao cosmetic cream
10	<i>siagua ogub maket duleburguis satgi</i>	Grieving ceremony
11	<i>siagua kammu suet igargi eboleget</i>	Flute Search
12	<i>siagua ogub maket dule burguisat gas urba</i>	Post-mortem ceremony
13	<i>kurgin inagi eboleget siagua</i>	Intelligence medicine
14	<i>siaguagi wuaet</i>	Cacao smoke-bath

communicate with and transport spirits over great distances. In terms of diet, cacao is used in a number of revitalizing preparations that are traditionally consumed on a daily basis and are often attributed aphrodisiac-like qualities.

On many occasions, elders and other community members expressed their deep concern that if local pathogen-induced shortages of cacao were to continue, the most

Figure1.1: Kuna Cacao Use and Spiritual Belief - images:

Figure 1.2 - Above: An illustration of parallel universes – *neg burbaled*, and *neg sanaled*. Below left: Kuna woman showing toasted cacao beans. Below right: Braizer (*sianar*) burning cacao beans whose smoke indicates activation of spiritual power

important Kuna ceremonies could be undermined. (Barnes 2005) Elders often stated that if cacao were to disappear, the Kuna would become vulnerable and die. This made it clear that cacao occupies an integral role within the Kuna cultural system and that its loss may have considerable consequences for local culture.

According to epidemiological records, specialist cacao-pathogens became established in Panama in the mid-1960s (Aime 2005); this corresponded to a South and Central American decline in industrial cacao production. Although cacao is generally considered to be endemic to Central or South America (Henderson 2007), this fall caused West Africa's proportion of global cacao production to increase significantly, reaching 60%. (Young 2007; Bennett 2003) The most common and destructive pathogens, among 75 others, include "*Crinipellis perniciosa* (witches' broom disease) and *Moniliophthora roreri* (frosty pod rot or moniliasis disease)." (Aime 2005:1012) Despite the great decline in American industrial cacao production (Daviron 2002), the Kuna continued to care for their plants and have recently experienced difficulty in its production. (FDY, 2004) Indeed, the pathogens that attack cacao are very difficult to control without complicated technical knowledge and meticulous care. (Aime 2005; Young 2007)

Cacao is said to be used as a core element in many different cultural institutions (see Figure 1.0 for list of use-contexts). Therefore, the pathogenic stresses and the resulting loss of cacao production could lead to significant cultural changes. This concern relates to several studies that pay specific attention to the cultural centrality of individual plants among indigenous peoples, including cedar and salmon (Patrick 2004), coca (Cristancho 2004; Henman 1990) and the Green Turtle (Nietschmann 1988). However, seldom do these scholars explicitly consult local people regarding the cultural

consequences of a plant's loss. (Cristancho 2004; Patrick 2004) In fact, much of the research among indigenous people fails to elicit local perspectives on how availability of local species interacts with cultural change.

Although some theoretical tools have been proposed to understand the cultural importance of plants for indigenous groups, such as Nancy Turner's Index of Cultural Importance (Turner 1988), and Zent's Index of Ethnobotanical Competence (Zent 2001, 2004), few scholars ask local people to consider the dynamic relationship between local culture and a particular species. Instead, the aforementioned tools tend to use complex mathematical models to decipher broader cultural themes, such as loss of linguistic competence or ethnobotanical hierarchies.

In a time when a frontier of large-scale development interventions continues to advance upon indigenous lands, evaluating the cultural relationship between indigenous peoples and local species may provide "the most immediate reward of conservation or preservation efforts." (Garibaldi 2004:12; Patrick 2004; Reyes-Garcia 2005; Maffi 2001) Considering that indigenous peoples with homelands tend to inhabit the world's richest ecosystems (Maffi 2001), focusing conservation efforts on locally important species stands to support valuable social and ecological networks.

Cultural Keystone Species Theory (CKST) suggests that a culturally 'key' species is one whose loss would cause irreconcilable damage to a culture. If some communities have indeed witnessed a loss of cacao, which is said to be an irreplaceable element in 14 different cultural contexts (see Figure 1.0), then these contexts will presumably be compromised by the loss of locally grown cacao.

In this thesis, I use CKST to guide an inquiry into the cultural consequences of changing cacao availability among the Kuna of San Blas, Panama. Until now, this theory has been used as a heuristic device for interpreting past ethnographic research (Cristancho 2004; Garibaldi 2004; Nabhan 1994; Patrick 2004), but has never served as the theoretical basis for an investigation. Cristancho, who coined the expression “cultural keystone species”, has suggested that the loss of a cultural keystone species entails “significant cultural disruptions.” (Cristancho 2004:161) Considering the broad challenges in cacao agriculture, CKST invites a number of questions about the future of cacao-related cultural institutions among the Kuna.

1.5 Research Objectives

In this thesis, I extend my undergraduate research (Barnes 2005) by investigating the use and cultural significance of cacao in terms of whether it can be considered a “cultural keystone species” among the Kuna of three communities in San Blas, Panama. In other words: **How would ‘Kuna culture’ be affected by the loss of this important plant, and, can cacao be considered a cultural keystone species?** This question contains two principle dimensions. The first is a theoretical inquiry into whether or not the Kuna situation can be understood in terms of the CKST. The second is a hypothetical examination of whether local cacao availability can influence Kuna culture. The research related to this thesis relied heavily on the testimonials of elders and other local people in order to obtain their perspectives on the role of cacao in Kuna culture, and the factors that condition its importance from place to place and over time. The following is a list of sub-questions that aim to decipher the dynamic role of cacao in Kuna culture:

- a. How do people presently use cacao ceremonially and symbolically? How do different people (e.g., elders, youth, men, women) use cacao?
- b. What observations do elders and others have about the cultural importance of cacao, and its changing status in the culture and traditions of the Kuna?
- c. If there are changes in the use of cacao, how do local people feel such changes affect Kuna culture and identity?
- d. On a household basis: Is there sufficient local access to cacao for ceremonial, dietary, cosmetic, and other cultural purposes? Based on a relevant measure, i.e. pods, how much cacao is necessary to support local cultural practices? Is there a quality difference between the cacao that can be bought from external markets and the cacao that is produced locally? What proportion of cacao used by respondents is cultivated locally?

1.6 Organization of Thesis

In the following chapters, I develop the central research objectives of this thesis in the context of a theoretical and methodological approach intended to mediate a meaningful and constructive discussion of cacao's influential role in Kuna culture. More specifically, in Chapter 2, I describe and elaborate on the value of CKST as a lens through which to appreciate the cultural value of cacao among the Kuna. I propose that the decidedly cultural institutions to which cacao is so important are good contexts within which to understand the cultural consequences for the Kuna of losing this plant. In Chapter 3, I introduce the geographical context of my research and describe how working among the Kuna demands a methodological approach that is sensitive to the unique circumstances

that characterize Kuna communities. In Chapter 4, I present the results according to the three tenets of CKST – species use by humans (Section 4.3), species presence and abundance (Section 4.4), and strategic place of species (Section 4.5) – and discuss whether or not cacao can indeed be considered a cultural keystone species. In Chapter 5, I critique CKST in terms of how it contributes to understanding the Kuna context, and suggest a number of directions for future research involving indigenous people and culturally important species.

Although I do not pretend to grasp the complexity and dynamism of the Kuna's cultural manifestations, I hope to make a compelling case for the insights arrived at by examining the Kuna case from a CKST perspective.

Chapter 2 - Substantive Context and Theoretical Framework

2.0 Introduction

Indigenous, aboriginal, indian, First Nation, and autochthonous peoples are generally accepted to be the first humans to have occupied a place. (Field 1994; Jochim 1981) However, ‘indians,’ as such, did not exist until colonial powers needed a term of reference for the diverse human populations that were to be displaced, overcome, or annihilated. In this sense, *indigeneity* and *indianness* are as much artifacts of colonial domination, subordination, and dis-placement as they have become pillars of resistance and place-specific cultural identity. (Field 1994; Johnson 2007; Malone 2007; McSweeney 2007)

The Latin-American indigenous groups that have survived a 500-year legacy of cultural and economic domination face a future of increasingly diverse and complicated forces involving integration into national economies (Altamirano-Jiménez 2004; Ramos 2000; Reyes-Garcia 2005), loss of customary knowledge (Ventocilla 1995; Ventocilla 1997; Lizarralde 2004), and out-migration towards urban centers and away from traditional lands. (McSweeney 2007) Meanwhile, both academics and indigenous people alike have begun to devise ways of evaluating and mediating cultural change based upon locally occurring flora and fauna. (Elsass 1992; Maffi 2001; Nabhan 1994; Nabhan 2001; Ventocilla 1995) It has become clear that cultural change is not a linear process (Crang 1998; Domosh 2000), and that constant acculturation pressure often inspires a clear self-construction – meta-narrative, or collective story – that consolidates a shared cultural identity. (Elsass 1992) This consolidation often links indigenous peoples to certain

features of their landscape and ‘grounds’ cultural institutions. (Elsas, 1992; Malone, 2007; Patrick, 2004)

The outstanding cultural roles of certain local plants and animals can serve as pivotal benchmarks of cultural identity and continuity. (Jones 2002; Ventocilla 1995) Local plants are often critical elements in the performance of ceremonial, ritual, dietary, social, and curing customs (Chapin, 1983), and have thus become woven into the fabric of people’s shared cultural identity. (Nietschmann 1988; Howell 1998; Steinberg 2002a, 2002c, 2002b) In this sense, the integrity and continuity of distinct cultural features becomes somewhat reliant on the continued presence and availability of certain local plant species.

In the case of the Kuna, many plant species have a rich history and outstanding role in their cultural customs. (Chapin 1983) Having researched the cultural importance of cacao among the Kuna people of Panama, and having witnessed its seemingly reduced availability, I was compelled to ask about the perceived effects of its disappearance. Cultural Keystone Species Theory (CKST) suggests that the disappearance of a species can, indeed, have profound affects on the local culture of a group.

2.1 Chapter Outline

In this chapter, I develop a theoretical approach to understanding the value of cacao within the Kuna cultural system. However, it is worth noting that “culture” is a perennially disputed concept that tends to mean different things to different people at different scales. (Crang 1998; Geertz 1973; Johnson 2007) It is therefore important to consider how people define their culture, and how to interpret the influence of plants

thereupon. For this reason, I begin the chapter with a discussion of the dynamic and contested nature of culture before elaborating a theoretical framework – Cultural Keystone Species Theory (CKST) – that theorizes the important relationship between people and local plant and animal species. In the following section, I suggest that (at the administrative level) the Kuna conception of culture lends itself to tracking the consequences of losing a highly important species like cacao. In this chapter, I hope to convince the reader that despite the contested definitions of culture, CKST is an appropriate theoretical lens through which to view the cultural importance of cacao among the Kuna.

2.2 Culture and Systems

Culture is directly relevant to almost every discipline in the social sciences and humanities. (Crang 1998; Geertz 1973; Jones 2002; Nabhan 2001; Patrick 2004; Reyes-Garcia 2005; Welte 1986) A central concern of inquiries into culture is how to define it. (Crang 1998) The complexity of cultural manifestations makes them very difficult to conceptualize despite their widely recognized distinction from each other, and overall importance. (Maffi 2001; Permanent Forum on Indigenous Issues: Report on the Seventh Session 2008) This thesis adopts the CKST conception of culture, which considers culture as a system (closed it seems, as opposed to open, or at least semi-permeable and adaptive) in a way that is analogous to an ecological system. In this vein, I accept that cultural and ecological systems, are both ideological “webs of significance” that are spun by people (Geertz 1973:4), and rely on a diversity of non-human actors for their stability.

Considering cultures as ideological ‘systems’ suggests that their inner workings can be understood and that stability – however defined - is desirable. One of the outstanding problems with a systems (ecological) approach to culture “has been that it overemphasizes the stability or equilibrium of cultural systems to the neglect of disequilibrium”. (Jochim 1981:15) Indeed, suggesting that cultural equilibrium is possible purports that a clear idea of a culture can exist. However, culture is a “dynamic, contested (not universally agreed upon), and contingent (reliant on context)” idea, that is subject to different (and equally valid) interpretations at different scales. (Domosh 2000:111)

Viewing culture as a “most complex whole” may “obscure a good deal more than it reveals” about the functioning of human groups. (Geertz, 1973:3) Similarly, in terms of ecosystems, it is perennially debated whether or not there is indeed some decipherable order to ecological phenomena – especially in the tropics. (Hubbell 2005) However, in both cases (culture and ecology), their complexity does not negate the value of an investigation that seeks to understand the diversity of institutions that support their functioning and continuity. (Garibaldi 2004)

Despite the various conceptions thereof, “culture” has been used as a powerful tool to consolidate the core social, material, and economic features that bond indigenous groups in a collective struggle over land, resources and recognition within modern nation-states that would have them disappear (Elsass 1992; Field 1994; Johnson 2007; Ramos 2000) In *Strategies for Survival*, Elsass discusses the diverse coping mechanisms that indigenous groups mobilize in order to survive the waves of cultural, economic, and religious domination, so often pioneered by missionaries. (Elsass 1992) He suggests that

while coping mechanisms are as diverse as the corresponding pressures to change, domination (from without) often inspires a consolidation of what it means for local people to belong to a distinct ethnic group. In this sense, a shared identity or cultural homogeneity is not a manifest condition for being part of a cultural group (especially an indigenous one), but rather, it can be a repeatedly reinvented tool for resistance and maintenance of the core traits that allow people to live with integrity and distinction.

2.3 Theorizing Cultural Change and Plants

In *Ukupseni*, local people's concerns about the waning yield of cacao and its link to broader cultural change (Barnes 2005), correspond closely to the idea that certain plants and animals play a fundamental role in the maintenance of situated and shared cultural identity. (Howell 1998; Nabhan 1994; Nabhan 2001; Nietschmann 1988; Ramos 2000) Jones and Cloke (2002) propose that within many different cultural contexts people's relationship with the landscape is mediated by the active role of culturally important trees. Indeed they assert that while the actions of trees become grounded placeholders for cultural systems, they also tend to become conceived of as intentional cultural actors (Rival 1998) and integral elements of cultural networks. (Cooren 2000)

Steinberg suggests that some plants have become so deeply engrained in the Mopan Maya cultural context that their loss may undermine local livelihood and culture. (Steinberg 2002c) He proposes that the loss of red maize among the Mopan Maya has contributed to the destruction of what he calls a "cultural ecological core" set of activities that played a central role in the Mopan's culture and livelihood. (Steinberg 2002c, 2002b) In a similar vein, among the Miskito of Nicaragua, Nietschmann proposes that

overexploitation, and subsequent collapse of the Green Turtle has lead to social upheaval because of the multiple social and economic functions that it had traditionally fulfilled. Indeed, the title of Nietschmann's 1986 text – *When the Turtle Collapses, the World Ends* – alludes to the profound social and economic role played by the Green Turtle.

Both Steinberg and Nietschmann attempt to characterize the loss of an important species as being responsible for social upheaval and cultural change. As such, the authors describe the role of the species, its apparent loss, and their own impressions about how this loss has, and might continue to, affect local culture. However, this approach to understanding the cultural importance of species leaves much to be desired in terms of local perspectives. Although these species were of clear cultural value to their respective groups, in both cases, their loss has presumably not caused a collapse in local culture.

In both cases, it could be argued that these decidedly important species were intentionally foregone in an exchange for spiritual (among the Mopan) and economic (among the Miskito) changes. However, a number of concerns about broader cultural change are raised by the loss of these species, including: What is the future of the institutions, rituals, ceremonies, foods, and exchange networks that relied on these species? What are local impressions of how this loss will affect 'culture'? In the following section, I propose an alternative theoretical approach to understanding the role of local species that requires the involvement and perspectives of local people.

2.4 Cultural Keystone Species Theory

Cultural Keystone Species Theory (CKST) recognizes that certain species can play an outstanding role in the stability of a cultural system. In the same way that Ecological

Keystone Species Theory (EKST) has permitted biologists to “identify important elements that influence the dynamic processes and balances within an ecosystem,” CKST focuses on one centrally important species as a kaleidoscope through which one can view cultural dynamics. (Garibaldi and Turner, 2004:19) However, this relatively new theory has only been used as a heuristic device for identifying culturally important species (Cristancho 2004; Garibaldi 2004; Nabhan 1994; Patrick 2004), expanding theoretically upon ethnobotanical attempts to organize cultural importance hierarchies, based mainly upon economic usefulness. (Turner 1988) I argue that, following the example of EKST, focusing on a single centrally important species in terms of its loss from a system – in this case a cultural one – could be a powerful tool for indigenous people who have taken an interest in defining and preserving what they deem to be core traits of their cultural systems. Thus far, the theory has enjoyed only hypothetical work, wherein academics have developed definitional criteria for CKST, and attempted to decipher keystones from passed ethnographic research. (Cristancho 2004; Garibaldi 2004) In this section, I attempt to expand upon the applied value of an analogy between culturally and ecologically important species by moving beyond explorations of cultural importance, and focusing on how to evaluate the local cultural consequences of removing a culturally important species like cacao.

2.4.1 The Origin of Cultural Keystone Species Theory

In a time when ecological management gained public acceptance, EKST was a welcome theoretical advance that focused on the outstanding role played by one species within an ecosystem. This key species would act as a kaleidoscope through which other ecosystem processes might be understood, providing a clear context within which “general policy

and land-use dilemmas” could be resolved. (Mills 1993:219) In 1966, Paine first hypothesized that certain species (such as top predators) can have a disproportional effect on ecosystem structure and functioning, according to their activity, abundance, and strategic place within the community’s structure. (Paine, 1966) For example, Paine found that if *Pisaster ochraceus*, a seastar, were removed from the inter-tidal ecosystem, the stability and integrity of the entire system would be compromised, as dictated by species diversity. (Paine 1969) In this case, the *Pisaster* is considered a “keystone predator”, for its role in indirectly maintaining the populations of mussel prey, which would otherwise be undermined by monopolizing predatory pressure. (Mills 1993:220)

In contemporary applications of EKST, it is recognized that the key role of a given species need not be exclusively based upon predatory functions, but broadened to encompass mutualistic, symbiotic, constructive, and other functions that can have an outstanding effect on an ecosystem’s integrity. (Mills 1993) In threatened environments, EKST became an influential tool for identifying important species and developing integrative – albeit focused – conservation strategies around them. (Davic 2003; Mills 1993; Simberloff 1998)

EKST analysis is thus carried out by choosing characteristics that most closely represent ‘systemic stability’ – for example, species diversity, species richness or primary productivity – and attempting to measure the effects of removing a key species against these proxies, which are assumed to have otherwise remained constant. (Leibold 1996) Therefore, what Mills et al. call “community importance” of a keystone species is evaluated according to how its loss would affect a ‘proxy’ of stability. (Mills 1993:222)

Thus, the hypothetical importance of a keystone species is made clear through the outstanding effect of its removal upon a chosen proxy of stability.

Between the years of 1970 and 1989, Paine's famous keystone papers (Paine 1966, 1969) were cited over 942 times. (Mills 1993) EKST has, however, been criticized for its definitional ambiguity, tendency to essentialize otherwise complex systems, and potential to restrict the breadth of species consideration in the development of management plans. (Mills 1993; Carigan 2002; Simberloff 1998) Despite these concerns, EKST has been used as a productive theoretical lens for looking at the complexity and interrelatedness of ecosystem processes. (Davic 2003; Leibold 1996; Mills 1993; Simberloff 1998) Indeed, the removal of a key species dramatically demonstrates the fragility of ecosystems, cautioning against uninformed and destabilizing development interventions.

In attempts to understand and protect the integrity of cultural systems, many of the same considerations remain relevant. As mentioned earlier, the complexity of cultural systems makes them very difficult to define, let alone understanding the role of an individual species within them. However, many plants and animals are of outstanding importance within indigenous cultural systems. The following represent only a few examples: the deep significance of maize for the Mopan Maya (Steinberg 2002c, 2002b), the importance of two palm species among the Northern Lio (Howell 1998), the deep economic and social value of the Green Turtle among the Miskito of Nicaragua (Nietschmann 1988). These species are of such cultural importance – economically, socially, politically and spiritually – that their continued availability would seem integral to the continued existence of their relative cultural contexts. Indeed, over time these

plants have not only been integrated into, but have inspired and created local cultural systems that have coexisted with, what are now the most vulnerable and precious ecosystems on earth. (Maffi 2001) Accordingly, there is a distinct interest in understanding and evaluating change of indigenous cultural systems, and identifying the diverse pressures that would have them disappear.

2.4.2 The Invention of Cultural Keystone Species

The first mention of CKST occurred in the title of Gary Nabhan's edited compilation of essays where he suggested that Ironwood is both a cultural and ecological keystone species in the Sonoran desert. (Nabhan 1994) Although the book paid little attention to the cultural importance of Ironwood, Nabhan's suggestion may have inspired others to elaborate the analogy between ecologically and culturally important species. Ten years later, Cristancho and Vining (2004), and Garibaldi and Turner (2004), elaborated the concept of CKST, asserting that "certain species play a unique role in shaping and characterizing the identity of the people who rely on them". (Garibaldi 2004:6) These species, which "become embedded in a people's cultural traditions," operate analogously within the 'ethnosphere', to ecological keystones operating within the 'biosphere.' (Garibaldi 2004:10) In order to elaborate this analogy, these scholars revisited Paine's work (Paine 1966, 1969), wherein he made the first attempts to define and measure the influence of a keystone species.

2.4.3 Defining a Cultural Keystone Species

Assuming "that cultural stability is beneficial for the communities in question," Cristancho and Vining (2004) suggest that a guiding principle for defining CKST should be that a keystone's "loss may cause irretrievable and catastrophic damage to a culture".

(161) Although the precise definition of ‘cultural catastrophe’ is left unexplained, it would presumably involve a disappearance of the core institutions by which local people identify, perform and recreate their culture. Similar to EKST, the focus becomes identifying which characteristics ensure systematic – in this case cultural – stability, and deciphering how the loss of a species could affect that stability. Cristancho and Vining attempt to do this by reviewing ethnographic literature and building a list of features characterizing species that can ensure cultural stability for indigenous people (2004:159):

Figure 2.1: Cristancho and Vining’s Seven Conditions for CKS Status - Paraphrased

1	The story of the species’ origin is tied to the myths , the ancestors, or the origin of the culture.
2	The species is central to the transmission of cultural knowledge.
3	The species is indispensable in the major rituals on which the community’s stability depends.
4	The species is either related to or used in the basic needs of the community; getting food, creating shelter, curing, etc.
5	The species has significant spiritual or religious value .
6	The species exists physically within the territory that the cultural group inhabits or to which it has access.
7	The cultural group refers to the species as one of the most important species.

(Cristancho 2004:158-159)

Cristancho and Vining’s generic framework for identifying a species that might ensure cultural stability, succumbs to one of the harshest criticisms of its analogical predecessor – that it attempts to generalize the features constituting stability, whereas these are invariably context specific. (Mills, et al. 1993) Although it is expected that a keystone species occupy a decidedly “most important” role within a community, it is

possible that a species is of great cultural importance without necessarily having a role in “spiritual or religious” activities. In essence, the cultural (and indeed ecological) stability, and appropriate metrics thereof, depend on the context and functioning of the system in question.

2.4.4 Identifying Cultural Keystones

Cristancho and Vining suggest that a keystone’s importance within the cultural system can also be evaluated according to “(1) species use by humans, (2) species presence and abundance in human communities, and (3) species function in the psycho-socio-cultural structure” – analogous to Paine’s three definitional tenets⁴. (2004:155) In the case of an ecological keystone species, a disappearance (or, in some cases, slight reduction) in the presence of a keystone species may foretell dramatic ecological changes – related to its activity, and strategic place within the community’s structure. Similarly, if there is a change in CKS presence and abundance, the context within which it is used and functionally important will presumably undergo considerable changes. These three tenets set out a basis upon which the characteristics and roles of a keystone species can be evaluated, linking its presence and abundance to the persistence of a cultural system over time.

The hypothetical effect of removing a keystone species upon system integrity or stability remains the focal point of CKST analysis. However, defining what constitutes stability is a problem for those interested in the protection of both ecological and cultural systems. After all, who purports to define what an ecosystem is, and where it begins and ends – let alone, qualification of its ‘stability’? Indeed, the idea of an ecosystem is as

⁴Paine’s three tents of EKS are – “(1) species activity, (2) species abundance, (3) strategic place of species within the community’s structure” (Cristancho and Vining 2004:155)

much a construct of our collective imagination as is the idea of a cultural system. (Burnham 1978) Mills et al. (1993) suggest that in terms of ecological systems, the choice of proxy often becomes a normative political decision that insists on elevating select features, such as biodiversity, at the expense of others. In terms of cultural systems, a diversity of approaches have been taken in order to evaluate cultural change and stability. In some cases, academics focus on linguistic loss (Maffi 2001), in others; ethnobotanical knowledge (Zent 2001), and yet in others, they focus on dietary intake. (Hollenberg 1997)

In the context of my past research among the Kuna, cultural stability was repeatedly linked to the continued performance of fourteen different cultural institutions to which cacao is essential (Barnes 2005) (see Figure 1.0). In this sense, the adequate performance and persistence of these institutions emerges as a possible proxy for cultural stability and integrity. In the following section, I argue that the Kuna's "hierarchical social organization characterized by the leaders' coercive powers, and control over knowledge of ritual and group history" (Field 1994:241) provides a cultural context wherein CKST can be used effectively to track how changes in the availability of cacao may affect a rigidly defined Kuna culture.

2.5 Kuna Politics of Culture

In this section, I suggest that the Kuna idea of culture is hierarchically decided, disseminated, and performed as a way of maintaining autonomy, rights, and identity within a historical and national context that would have had the Kuna disappear a long time ago. Field refers to this as a "cultural survival" approach to "indianness", which

presumes that indigenous societies can be named, “exist in given locations, and ... [assigned] fixed cultural traits, particularly language, worldview, and its rituals.” (Field 1994:238) Indeed, Kuna leadership has sought ways to mediate and, in some cases, arrest the cultural integration that has dispossessed so many other indigenous peoples of their lands and identities. (Howe 1986, 1991; Sherzer 1995; Ventocilla 1997)

Like most indigenous peoples who have come into contact with Europeans, the Kuna have been under constant and diverse pressure to abandon customary lifestyles in favor of customs and religion that arrive from abroad. Although there are many theories about the Kuna’s geographic origin, upon the arrival of the first Europeans in South America, the Kuna fled what is now referred to as Colombia’s capital region, or Bogotá, for the Caribbean coast of what would be Panama. (Chapin 2000; Ventocilla 1995) At the turn of the twentieth century, and after approximately four hundred years of intermittent contact with Europeans, the Kuna would become a part of Panama, whose government began to place concerted acculturation pressures on them. (Chapin 2000; Howe 1998) By 1925, resistance had developed among Kuna leadership and small coalitions of young adults were dispatched to forcibly remove Panamanian police, liberating most Kuna communities, where traditional dress and ceremonial life was being forbidden by the state. (Chapin, 2000; Howe, 1995; Howe, 1998)

This revolt, commonly referred to as the *La Revolucion Dule* (The Kuna Revolution), was conceived by the famous Kuna General Coleman and his protégé, Nele Kantule, who had dreamt of reviving ‘the Kuna culture,’ which had been so severely damaged by state pressures. (Ventocilla, 2004; Howe, 1998) Because of this history of acculturation pressure, the Kuna have made concerted efforts to consolidate what it

means to be Kuna, especially building upon a suite of core cultural traits which had been forbidden under state domination and remain juxtaposed against the drawbacks (robbery, crime, and poverty) of mainland Panamanian society. (Chapin 2000; Howe 1998; Sherzer 1997)

The idea of ‘culture’ as a unitary and confirmative phenomenon is said to be new among the Kuna, drawing upon generations of resistance and struggle, and inspired by leaders like Nele Kantule. (Arias 2008; Howe 1991) Although the Kuna casually refer to their customs as *anmar inmar* (our way), or *dule moga* (the Kuna way), ‘culture’ – as such – is most commonly referred to by the word *purba*, which is traditionally used to signify ‘the wind’ or ‘spiritual forces’. (Chapin 1983:566; Arias 2008) However, according to Arias (Arias 2008), following Nele Kantule’s famous (and indeed revolutionary) orations, *purba* has become used to encapsulate the essence of Kuna culture and spirit – becoming entrenched in a suite of core cultural traits that had been strategically forbidden by missionary and state forces – among others, the *inna suit* (strong drink gathering), curing rituals, *dule mor* (traditional female dress), and traditional livelihood activities.

2.5.1 The Establishment of ‘Kuna Ways’

The idea that indigenous groups naturally possess a homogenous ‘culture’ and consistent values by virtue of their indigeneity has been harshly criticized. (Crang, 1998) It is now much more common to see indigenous groups as subject to the same cultural dynamism and intra-cultural heterogeneity with which Westerners so easily identify (ibid). However, common to many marginalized self-sustaining peoples, the creation of a shared identity is often mobilized as a resistance strategy. (Elsass 1992; Field 1994; Urban 1991)

Accordingly, the Kuna make concerted efforts to develop and maintain cultural standards that stand to ensure social order, and stand in contrast to mainstream Panamanian society. (Chapin 2000) The Kuna's cultural and livelihood standards are highly organized and managed by local authorities, in what is often considered a losing battle against the threat of acculturation and domination by outsiders. Accordingly, the title of Mari Lyn Salvador's book, *The ART of BEING KUNA* (which combines essays by famous ethnographers of the Kuna) alludes to the Kuna's cultural manifestations in terms of an artistic performance that is carried out on a stage of diverse pressures to change. (1997) This conception of culture resonates with what Nelson (1999) calls "Judith Butler's concept of performativity," (331) envisaging people's identity as a phenomenon produced according to the intersection of power and discourse, which is "continually reproduced through processes of re-signification, or repetition of hegemonic [...] discourses". (Nelson 1999:337) However, according to Nelson, Butler's idea of identity relegates the subject (abstracted humans) to the position of a vessel, succumbing to, and thus reproducing dominant discourses. (1999)

This conception presumes a cultural proletarianization whereby subjects have limited involvement in what becomes a dominant discourse. However, Kuna cultural institutions do not simply occur, but are discussed, negotiated and maintained by communities themselves – particularly in the *onmaked*, or gathering house (commonly referred to using the Spanish word, *congreso*). (Chapin 2000) While Kuna culture is administratively maintained by respected community members who are the cultural authorities and guides (Howe, 1991; Chapin, 2000), their power is continually negotiated according to collective idea of how local life should be.

2.6 Discussion: Cacao as a Cultural Keystone

The Kuna make clear attempts to ensure the persistence of decidedly ‘cultural’ traits as part of a meta-narrative involving an ongoing struggle against acculturation pressures. In a context of rapid development and constantly changing social pressures, the consolidated idea of Kuna culture is continually challenged – inspiring a local interest in ways to evaluate cultural change. In my past research, the residents of *Ukupseni* suggested that because of cacao’s central role in many different culturally important contexts, its disappearance would entail catastrophic cultural consequences as extreme as the arrival of potent epidemics, against which the Kuna would be defenseless. (Barnes 2005) Accordingly, the changing availability of cacao is of clear relevance to Kuna communities and local cultural authorities. Indeed, evaluating the key role of outstandingly important species creates a venue for exploring cultural change as it relates to relevant features of the local cultural landscape. In this sense, CKST is well placed to guide an inquiry about the actual and hypothetical impact of cacao’s disappearance.

In this chapter, I have introduced CKST as an apt theoretical approach to understanding the integral role of local species in the cultural lives of the Kuna. This investigation is original, in that, to the best of my knowledge, it represents the first attempt to design and apply the CKST theory with the explicit knowledge and in-situ participation of local people. I suggest that rather than remaining a heuristic device to be pontificated in the realm of academia, CKST is well placed to elicit local proxies of cultural stability, against which “cultural performance” can be understood. I further suggest that the analogy drawn between ecological and cultural keystone species compels academics to investigate the dynamics of local cultural systems on terms dictated by

locals instead of continuing a highly disputed legacy of selecting proxies of systemic stability that may not be contextually appropriate.

In the following chapter, I describe the methodological approach that I have taken in evaluating cacao's role as a cultural keystone species among the Kuna of three communities in the Cartí region of San Blas, Panama. A relationship involving transparency and cooperation emerges as an important feature of working with the Kuna and devising ways to understand the cultural role of cacao.

Chapter 3 - Methodology

3.0 Introduction

In what James Howe calls an *ideological struggle over San Blas culture*, the Kuna have traditionally fought for a collective interpretation of what it means to be 'Kuna', and have mounted a united defense of their identity and culture against institutionalized state acculturation pressures. (Howe 1991) For this reason, matters related to the interpretation of the Kuna's various cultural manifestations remain politically, socially, and historically charged issues. This has a great influence on the methods employed by researchers interested in studying the Kuna, especially in the context of research involving culturally important plants like cacao. (Posey 1995)

In order to carry out research on Kuna territory or with reserve-dwelling Kuna people, researchers must walk a complicated administrative tightrope. (Chapin 2000) In fact, the General Kuna Congress (GKC) is known to respond quickly and severely to investigators and institutions that do not follow a set of elaborate research guidelines while maintaining a high degree of transparency about their activities. Two examples of such decisive administrative actions are the 1998 ousting of the Smithsonian Tropical Research Institute (STRI) (Alper 1998)) and the more recent rejection of Peace Corps volunteers. In each case, relations with these institutions and their members were cut by the GKC because of unresolved suspicions about their activities. Although these two American institutions had previously enjoyed excellent historical relations with the Kuna, failure in the provision of transparency was sufficient grounds for the GKC to blindside both with immediate expulsion from Kuna lands.

Beginning with the 1983 *Study Project for the Management of the Wildlands of Kuna Yala* —(PEMASKY), research in Kuna Yala was carried out according to strict guidelines. (Chapin 2000) The research manual – “Research Programme: Scientific Monitoring and Cooperation' (Programa de Investigacion Monitoreo y Cooperacion Cientifica)” – was designed to set standards for how researchers would go about their investigations and eventual publications. (Posey 1995:897) Themes in the manual included post-research data-ownership, informed consent, and cultural/ environmental impact assessments. (Posey 1995)

Those who are interested in carrying out investigations among the Kuna have two main options – either seek a research permit from the GKC, or solicit permission from one of the few Kuna non-governmental organizations (originally invented by the PEMASKY) who can also allow research. Both of these institutions are committed to ensuring that research guidelines are closely followed by researchers. Thus, although clear guidelines prescribe a number of operational imperatives for researchers, a methodological approach involving transparency and sensitivity to power relations remains of clear importance in building lasting relationships with Kuna communities.

Prior to discussing my methodological approach to this research, a distinction must be made between the terms methodology, method, and epistemology. Pamela Shurmer-Smith writes that "methodology is not just a matter of practicalities and techniques, it is a matter of marrying up theory with practice (the '-ology' of method)." (Shurmer-Smith 2002:95) Epistemology deals with how knowledge is created and standards for what counts as knowledge, whereas method involves the techniques that are employed in an investigation. It is possible for epistemological assumptions to influence

methodological approach and to have political effect. Indeed, Linda Tuhiwai Smith asserts that knowledge construction and culture can be “as much a part of imperialism as raw materials and military strength.” (1999:58) The colonial approach to acquiring knowledge about new people and places was “undeniably also about power and domination,” and colonial research methods were “instruments for legitimating various colonial practices.” (1999: 60)

3.0.1 Methodological Overview

The Kuna have a disdain for such *colonizing methodologies*, demanding a research encounter that stands to deliver clear benefits to local people. This calls for a research methodology that will be both sensitive to frameworks of domination, and of clear value to the Kuna. In this research, I have adopted a *post-colonial* methodology attempting to identify and avoid marriages of theory and practice that continue a tradition of such imbalanced and tacitly accepted domination. Feminist geographical theory is well suited to address power relations, positionality, and reflexivity – concepts that recognize the researcher as a non-neutral and powerful ‘other’ who has a distinct effect on research design and outcome.

This investigation was carried out across three communities in the Cartí region of Kuna Yala between April and September 2007 (see Appendix 2 for History of the Research Process). During this six-month period, I lived with my interpreter, Domingo Diaz, in local households for a total of 8 weeks. I designed an informally delivered questionnaire, and semi-structured interviews, in order to encompass the central research questions relating to the distinct features of Cultural Keystone Species Theory (CKST). The questionnaires were designed to elicit more quantitative information about local

cacao agriculture, whereas the semi-structured interviews were designed to elicit an in-depth account of cultural dynamics related to cacao. After securing informed community/individual consent, the semi-structured interviews were conducted with 30 respondents (10 per community) who were selected by local administrative committees as ‘knowers of cacao’. Semi-structured interviews lasting between one and two hours were carried out in-home with an interpreter, who recorded all dialogue with a digital recorder. The informal questionnaire was administered at random to 89 respondents (~30 per community). Qualitative interview data was analyzed by searching for recurring themes in responses, whereas interpretation of quantitative data involved tallying and frequency analysis. Compact disks with the interview recordings of consenting respondents were returned to communities during a follow-up trip for two weeks in February 2008, when interim results were presented to all three communities and thus opened up to critique – an integral demonstration of reciprocity and commitment to accuracy.

3.1 Chapter Outline:

In section 3.2, I begin by introducing the study area, community selection criteria and field sites. In section 3.3, I discuss the administrative tightrope that must be walked in order to do research in Kuna communities. In section 3.4, I introduce respondent selection, interviews, consent and confidentiality, leading to section 3.5 where I describe how data analysis was carried out. I finish the chapter in section 3.6, by discussing my ‘positionality’ as a North American “white” male researcher in Kuna communities, and how this might have affected research outcomes.

3.2 Study Area, Community Selection and Field Sites

3.2.1 Study Area

The Comarca of Kuna Yala (San Blas), is located along the Caribbean coast of Panama, beginning near Colon and extending to the Colombian border (see Map 1). Most people living in Kuna Yala inhabit small, densely-populated islands from which the mainland is accessible by boat (Ventocilla 1995). The Kuna island-settlements are connected with the Panamanian mainland by only one means: the Llano Cartí Highway. This road serves as an economic inlet for resources from Panama City, for island dwelling Kuna. Traditionally used as an entrance point for basic staples like green bananas, sugar, and flour, the highway is increasingly being used by a mobile Kuna workforce.

Local livelihoods are clearly delineated along gender lines, whereby men fish, hunt, cultivate, harvest, and build houses, while women prepare food, cook, take care of children, and sew *Molas*, which fetch high but fluctuating prices from visiting cruise ship travelers and Panamanian craft markets. However, local livelihood is generally becoming focused on tourism, seafood exports, and miscellaneous entrepreneurship. Many of these activities favour a cash income, allowing families to purchase rather than cultivate, fish, hunt, or harvest their food.

3.2.2 Community Selection Rationale

Theobroma cacao is a traditional plant of great cultural importance for the Kuna. Cultural Keystone Species Theory (CKST) suggests that the removal of “those plant and animal species whose existence and symbolic value are essential to the stability of a cultural group over time ... would entail significant cultural disruptions.” (Cristancho 2004:161) Conscious of the devastating pathogenic stresses that have collapsed cacao

production throughout Central America (Aime 2005), I presumed that in certain Kuna communities cacao production would have fared better than in others, leading to greater access to cacao and less adversely affected cultural systems (or vice versa).

For this reason I attempted to select three study sites most likely to have low, intermediate, and high levels of access to cacao, respectively. This was done in consultation with the executive members of the Fundación Dobbo Yala (FDY; see section 3.2), who found it difficult to disentangle ‘access to cacao’ and ‘traditionalism’. Indeed, instead of discussing which community would have had more cacao, the discussions became focused upon which community was more traditional and hard-working. I also requested that the potential research sites be located in the Cartí Region of San Blas. This was important because transportation to this area was less costly than others, and because the FDY had previously carried out very few projects in the region (explained in section 3.3).

3.2.3 Field Sites

The three field sites (see Map 1) can be accessed by the Llano Cartí Highway, depending on its seasonal condition. Each community has a basic school where children between the ages of five and eleven are taught to read, write and speak Spanish, English, and French. Due to space constraints, some households care for seedlings and medicinal plants on the islands,

Map 1: Excerpt from PMIE map of Kuna Yala (beige coastal area) and surrounding mainland Panama: Scale 1: 650,000

(Identificación de Áreas Prioritarias Del P.M.I.E. en la Ecoregión Darien - Kuna Panamá Unknown Year)

Table 1 – Research Site Selection Characteristics

Factors	Probable Access to Cacao	Accessibility	Past Research Project Involvement
<i>Community</i>			
<i>Mulatupu</i>	Least	Yes	Recent involvement in World Bank Project
<i>Myria-Ubgigandup</i>	Intermediate	Yes	None
<i>Molakedup</i>	Most	Yes	None

but virtually all agricultural activities take place on the mainland. All three communities are considered neighbors and are situated within one kilometer of the mainland. Each community enjoys unique access rights to at least one river that meanders into humid tropical lowland forest.

Most of the 40 small island and 12 mainland communities have autonomous political organizations called *congresos* (from the Spanish word for ‘congress’), or *onmaked* – roughly translated as ‘gathering’. (Chapin 2000) The *congresos* are run by a governing group of local elders, and are presided over by the *sailagan*, who are the elected highest authority, bearing the role of ultimate decision makers. The *congreso* is attended daily by men of all ages, and on occasion, the whole community is required to attend. Decisions on matters of community cohesion, “tradition, village business, and the tenor of moral conduct” are made at the centrally located *congreso* building. (Chapin 2000:9)

The first community, named *Mulatupu* (Turkey Vulcher Island in English), is situated approximately three nautical kilometers from the mainland highway, and has a population of 500 people. *Mulatupu* is approximately the size of a half-football field, having very little space for anything other than houses, a school building, and a small recreation courtyard. *Myria Ubgigandup* is about twice the size of *Mulatupu*, and lies approximately eight nautical kilometers away, with a population of 900 people. *Myria-Ubgigandup* is known throughout the *Comarca* of Kuna Yala for being one of its most politically active communities, and in fact, the last community to allow the entrance of the national public education system. With a population of nearly 400 people, *Molakedup*

is about the same size as *Mulatupu* and is located approximately 15 nautical kilometers away from the Llano Cartí Highway.

3.3 Administrative Tightrope

3.3.1 NGO Research Affiliation

The Fundación Dobbo Yala (FDY) is a Kuna non-governmental organization (NGO) involved in implementing, evaluating and searching out funding for development and conservation projects in Kuna Yala. Working as a research intern with the FDY in 2005 allowed me to begin investigating the cultural importance of cacao among the Kuna of *Ukupseni*⁵ as part of a larger technical project aimed at creating sustainable benefits from local cacao agriculture. FDY is one of the two NGOs with an annually renewable research permit, allowing it to collaborate with foreign and local research interests at its own discretion within the limits of pre-established GKC guidelines. The FDY research program is designed to complement proposed and ongoing projects conducted by highly educated Kuna consultants and ‘technical specialists’.

The support of FDY has allowed me to design a research project with potential applied value that avoids the complications so often associated with directly seeking GKC research permits (see Appendix 3 for research contract). Due to the diverse political agendas and a highly critical research evaluation process, research projects that are brought before the GKC often become politicized and stigmatized even before they arrive at the local level. Working with FDY provided a simple and discrete gateway into local communities, allowing me to first negotiate research objectives with the FDY and then refine them within each community.

⁵ *Ukupseni* is located in the *Ailligandi* region of the Comarca of Kuna Yala.

While in many ways it is advantageous to maintain a research relationship with the FDY, such an affiliation is not always well-received or uniformly understood at the community level. Although the FDY generally enjoys a great deal of local respect, the notoriety of several projects that failed to live up to community expectations remains a significant procedural barrier to future projects and research. In the context of my project, communities initially assumed that my research was the first part of an eventual agricultural development project. However, after repeating the research objectives and reassuring the community of my disinterest in future development projects, the leadership eventually understood that I was not there to establish a project on behalf of the FDY.

3.3.2 Local Agreements

Prior to beginning the investigation I made an introductory visit to each community. Although traveling to communities is a long and somewhat complicated process, these visits were important for demonstrating a commitment to the principles of transparency, cooperation, and non-coerciveness. Indeed, many NGO-supported investigators arrive in Kuna communities with a research proposal and contract hoping to begin their research project in the days following their first contact with community members. This method allows very little time for communities to reflect upon, and possibly alter, the proposed research project – discursively limiting local stakeholdership, agency and participation in the research process. Proposing my research to the community and asking for feedback was a way to truly involve and empower the community, including its leadership, in the research process. As one community *Vocero* said upon our arrival:

I was bathing today when I saw your sail-boat arrive. I saw you people, and it warmed my heart. I knew that you would only bring good news. You have not come like the Mormons, who buzz in and out with large motor boats as if saying 'we are better than you'. You have come in a Kuna boat, like our ancestors and asked permission to begin talking about number-one - *siagua*. You care about Kuna culture and are here to shake people out of a deep sleep. People are forgetting *siagua*, and on your return you will jar their memory. We anxiously await your return.

~*Raphael Arias – Vocero – Community of Myria-Ubgigandup*

When we returned to the three communities, we were expected and anxiously awaited by community members. It was originally agreed that the themes from preliminary meetings would be drawn into a tri-lingual (Kuna, Spanish, and English) written contract that would be edited and finalized upon our return. However, the contract proved an ineffective way of establishing terms of engagement, although a research contract is often called for as a means of brokering research in indigenous communities. (Castellano 2004; Velasquez 2007) This was due to matters of literacy and the inappropriateness of contract language in what is meant to be an agreement for a trusting relationship. In fact, after drafting community-level research contracts in English, Spanish, and Kuna, and undergoing preliminary community-level editing and reviews, it was invariably decided that English and Spanish 'contract vocabulary' translates poorly into Kuna. Reviewers suggested that if the Kuna version of the contract were to be read in the *congreso*, negotiations would be overwhelmed, potentially causing a stalemate and rejection of the project. Community leaders suggested that an oral agreement would be much more appropriate in this context.

In the oral agreement, I addressed a number of themes involving where, who, and how many people I wanted to interview; an overview of the questions that would be asked of respondents; the proposed length of formal and informal interviews; the

honorarium for participation in formal interviews; the principles of respondent consent; the ‘limited’ option of confidentiality and anonymity; the return of interview recordings to the community; and, the honorarium that I would agree to pay to the community *congreso*. Many of these points were included in the application to the Carleton Ethics Committee for this project. In the process of making the oral agreement, respondent selection, consent and confidentiality underwent a number of unexpected changes, which will be further elaborated in the following section.

3.4 Respondent Selection, Interviews, Consent and Confidentiality

3.4.1 Respondent Selection

Many Latin American indigenous groups with hierarchical organizational structures have fared better against colonial pressures of acculturation than those without such structures. (Field 1994) Elsass (1992) suggests this contrast is due to the centralization of cultural authorities whom, despite broad acculturation pressure, are able to serve as loci of tradition and quick adaptation, and then diffuse ideas in a hierarchical manner. The hierarchically organized Kuna are often referred to as a remarkable example of an indigenous society that has, despite extensive relations with and mobility within Panamanian society, maintained distinct linguistic and cultural institutions. (Chapin 2000)

Accordingly, the respondents were selected through the highest local authorities and were known as *sia dulet* (or knowers of cacao). These people were considered to be the community members with the clearest understanding of the status of cacao and its myriad of uses. During our presentations in the local *congreso*, Domingo Diaz and I

would request that instead of having us personally choose candidates for interviews, some sort of *ad hoc* committee be formed to select interviewees based on loose criteria – in essence, allowing the community leaders to decide who would represent local reality related to the theme of cacao. Central among the loose criteria suggested were equal gender representation (5 men and 5 women), and the selection of *knowers* with differing cacao-related specialties. The latter was of considerable importance because Kuna professions – like *sia nele* (cacao doctor), and *absoget* (exorcism expert) – differ dramatically in the nature of their interaction with cacao.

This approach relinquishes power of representation to the community's cultural authorities, and is consistent with the perspective that although *culture* is a “dynamic, contested (not universally agreed upon), and contingent (reliant on context)” idea (Domosh 2000:111), it can be hierarchically invented and reinvented “as a part of reproduction of... identities.” (Field 1994:241) In this sense, the use of random statistical methods in respondent selection would usurp local cultural authorities. The objective of formal interviews was not to elicit statistically significant datum from a (representative) subset of community members, but rather to obtain the testimonials of those selected as *knowers* of the status of *siagua* and its related uses.

3.4.2 Interviews and Questionnaires

Interviews and questionnaires were built upon the three tenets of CKST – historic and current changes in species use, species presence and abundance, and species cultural importance – suggested by Cristancho and Vining (2004) in order to identify cacao as a species of cultural importance, and to evaluate the cultural consequences to the Kuna of its changing availability. Designing the interviews and questionnaires in this way

broadened the scope of Cristancho and Vining's heuristic definitional framework by extending its application to local perceptions of the changing availability of cacao and the impacts of those changes. In this sense, rather than broadening understanding of cacao's cultural significance among the Kuna, this method sought local impressions of how its loss would affect Kuna culture. In order to do this it was important to develop a line of inquiry that tracked local impressions of the historic and current changes in species use, species presence and abundance, and species cultural importance, paying particular attention to the relations between these three tenets.

Aided by Domingo Diaz, my field interpreter, I carried out 30 semi-structured, in-home interviews (10 per community), and delivered 89 informal questionnaires (approximately 30 per community) with no overlap in respondents between the interviews and the questionnaires. Informal questionnaires focused more on quantitative indicators of the presence and abundance (or availability) of cacao, and included questions such as:

- How many cacao trees do you have?
- Whose are they?
- What state are they in?
- How many did you plant?
- When was the last time that you tended to the plot that has cacao?
- When was the last time that you tended to your other plots?

The semi-structured interviews, lasting between one and two hours, were focused on local perceptions of cacao's uses and its changing cultural importance (see Figure 3.1 for picture of the typical interview). More specifically, respondents were asked to gauge

trends in personal and community use, availability, and the cultural importance of cacao. The interviews began with simple ‘cacao identification’ questions. Respondents were shown a series of 13 pictures of cacao in different forms and asked to identify them (see Figure 3.2). Because *siagua* (pronounced: *seeyagua*) is a generic word that is modified based on the root *sia* in order to specify its different forms, it was important to begin the interviews by establishing clear terms of reference. In addition, because cacao was apparently available from two principal sources – locally, and from Panama City – the cacao identification questions were designed to probe when the word *siagua* was modified according to the different manifestations of cacao depicted in the images. For this reason, the picture-identification chart was thematically divided into two sections: cacao from here, and cacao from outside (see Figure 3.2).

Once terms of reference had been established, respondents were asked to specify which *siagua* was used in a number of different ceremonial and consumptive contexts.⁶ I felt that this was an important step for two reasons. First, it ruled out the possibility that non-traditionally available forms of cacao (for example, cocoa powder) were being used in unexpected ways⁷. Second, an overview of cacao’s diverse uses refreshed respondents’ memories, and pre-empted a series of broader questions that would follow addressing themes of Kuna culture as related to cacao use.

Questions concerning whether or not there had been any change in the frequency of cacao related ceremonies, the most available type of cacao, and the proportion of cacao coming from places outside of Kuna lands sought testimonial responses from the Kuna ‘knowers of cacao’ who had been designated as local experts in cacao’s availability and

⁶ These use-contexts are drawn from 2005 research in *Ukupseni* where I investigated the various cultural uses of cacao. Only one cacao-use was not called by the same name in the Cartí region.

⁷ Unexpected uses of cacao would deviate from those revealed in my 2005 research.

Figure 3.1: Domingo Diaz and Salla Alberto Lopez during semi-structured interview

Figure 3.3: Results presentation planning committee – Myria-Ubgigandup

Figure 3.4: Homme Dumbad – Head women organizing siaguanis (traditional drink) distribution

Figure 3.2: Cacao Identification Sheet

Como se dice en Kuna?

Mazorca (1)

Mazorca abierta (2)

Mazorca por el árbol (3)

Semillas cubiertas de pulpa (4)

Semillas verdes chupadas (5)

Semillas secadas por el sol (7)

Semilla sin cáscara (8)

Semillas secadas en bolsa (6)
(PANAMA)

Polvo azucarado (9)
(PANAMA)

Polvo de cacao (10)
(COLOMBIA)

Semillas seme-molidas (11)

Verbo – Chupar semillas (12)

Bolas de semillas molidas (13)

its ceremonial uses by the *congreso*. Further questions that asked respondents what would happen to Kuna culture if cacao were no longer available, and how reductions in cacao affected Kuna customs and culture, empowered respondents as critical visionaries and historians of Kuna culture.

3.4.3 Payment

In my experience, when a respondent expected to receive payment for a semi-structured interview, he or she would put a whole day aside and forego going to the forest or fishing. In this sense, paying for semi-structured interviews was quite disruptive to people's daily activities. However, I had made my intentions and rationale for compensating interview participants transparent at the *congreso*, stating that I intended to compensate people for sharing a significant amount of their time and traditional knowledge. Although paying 5 US dollars for a local expert to share their knowledge may not seem like much, it was established in consultation with the *congreso* as being ample, whereas informal questionnaires would be unpaid and conducted on an *ad hoc* basis.

3.4.4 Consent and Confidentiality

Domingo Diaz and I suggested at the initial *congreso* meetings that we would respect the confidentiality of respondents, and would destroy the recordings after they had been reviewed. However, the *congreso* members of *Mulatupu* contested, "couldn't you just give us the recordings as a legacy of our elders' knowledge?" We agreed that if the respondent fully understood and wanted such a legacy, then it would be a good idea to compile these recordings so that one day people might review my research methods and the elders' responses to them. Twenty-nine of thirty formal interviews were digitally

recorded, and 25 people wanted their voices to be heard by the whole community and future generations. Of the four people that preferred not to share their recorded voice with the community, only one asked that after it is used for my review purposes it be destroyed. The other three preferred that I keep the record for myself and those in my country. All of these individuals' wishes have been duly respected .

3.5 Data Analysis

3.5.1 Post-Interview Reviews

Although I took extensive notes during the semi-structured interviews, Domingo Diaz and I also reviewed recordings in order to deepen our understanding of the testimonials and their relevance to the overall research objectives. Particularly important portions of interviews were transcribed into English based on Domingo's Spanish interpretation of Kuna testimonials. However, in cases where respondents spoke in Spanish, I directly transcribed relevant portions of testimonials into English text.

3.5.2 Data Entry and Coding

Questionnaires were composed of both ordinal and discrete categorical questions that elicited information about how many cacao trees local people have and the nature of their related agricultural activities. Data resulting from questionnaires were subjected to multivariate frequency analysis. Independent variables included the respondent and his or her gender, and dependent variables including 'number of trees possessed'. Respondents were asked discrete categorical questions such as "when was the last time that you visited your cacao trees?" resulting in a wide range of responses, that varied between one day and several years. For this reason, resulting data had to be grouped into ranges

represented by alpha-numeric code in order to perform basic statistical analyses using Microsoft Excel©.

Semi-structured interviews were composed of open-ended and categorical questions that sought the status and nature of cacao use based on a number of predefined cacao-use categories. While categorical data resulting from questions such as “what proportion of cacao is now attained from outside of the San Blas area?” lent themselves to frequency analysis, responses to open-ended questions were carefully reviewed for recurring themes.

3.5.3 Data Construal

CKST proposes that certain species are of outstanding cultural importance and that their removal may have a dramatic effect on local culture. This thesis employs the same three broad criteria or tenets as Cristancho and Vining (2004) in order to evaluate the cultural consequences of cacao’s changing availability. In this context, I categorically evaluated data in several distinct but interrelated categories: local use, availability, and cultural importance. In terms of local use, I reviewed cacao-identification data in order to demonstrate the diversity of ways in which cacao and its derivatives are referred to in the Kuna language, *dulegaya*. This data also served as a base map for linking specific forms of cacao to distinct cacao-use contexts. Next, I used data related to cacao holdings and access to different forms of cacao in order to describe current and historic cacao availability. Data related to changing availability served as a context for data concerning changes in use frequencies and a discussion of how Kuna culture both has been and might still be affected by changing cacao availability. Wherever possible I have

integrated quotations from respondents as a way to allow local narratives to speak for themselves.

I had originally imagined that locally varying levels of cacao holdings would produce marked differences in the local status of cacao-related ceremonies. In other words, I imagined that respondents from a community with very low access to locally grown cacao would describe local cacao-related customs as being more compromised than a community with greater access to cacao. Unexpectedly, all three communities had very restricted access to locally grown cacao and described attaining virtually all cacao from international and Panama City markets. My ability to carry out any relevant comparison between communities on the basis of access to local cacao was thus limited, although comparison of other factors proved interesting from a number of other perspectives that included gender, cacao holdings and agricultural activity. For this reason, data was predominantly aggregated and analyzed in an ungrouped manner – collapsing most data across communities since there was no significant difference in access to cacao.

3.5.4 Interim Results Presentation

In ethnographic research, it is important to make findings an iterative process that can be scrutinized by those who are being studied, while leaving communities with evidence of the research that was carried out. (Henderson 2002) One common method of ensuring such accuracy and accountability is to transcribe interviews, and subsequently submit them to respondents for review and editing. Considering the prevalence of illiteracy among elders, this would not have been practical unless the transcripts were then read back to respondents – a time consuming process to which I could not commit. Instead, I

provided respondents with a digital copy of the entire recording from their respective semi-structured interviews (see Appendix 4 for Respondent/ Recording Identification Chart).

In order to validate the research results and invite community critique, I organized community-wide presentations of the preliminary research results in each of the three communities. This was at once a demonstration of good faith toward the communities, an opportunity to highlight a theme of great local concern and relevance, and a chance to resolve any misunderstandings and potential misrepresentations on my behalf. Community leaders decided to make an event out of the results presentations and requested that I provide enough dried cacao beans for the confection of traditional drinks as a gift and as incentive for community members to attend the mandatory gatherings. Although it is difficult to estimate how many people ‘attended’ presentations, up to 70 community members were present inside of the *congreso*, whereas countless others often remained outside, listening to proceedings through its highly-permeable walls. Presentations were organized in a manner similar to the structure of this thesis. I first offered a broad discussion of indigenous cultural change, described CKST, restated the original research questions, reviewed the research methods, presented the preliminary research results, and asked for feedback on the results and research process. At short intervals throughout the presentation, which I delivered in Spanish, Domingo Diaz would intervene and interpret what I had said in the Kuna language (*Dulegaya*).

Following the presentation, one of the community’s official interpreters, called the *vocero*, reiterated the talk’s main themes. In all three communities, each *vocero* expressed feelings of astonishment and disbelief that we had so accurately understood the

situation. Invariably a number of other interventions followed agreeing with the findings and calling for immediate action on behalf of the whole community.

3.6 Discussion: Methodology, Participation and Positionality

Historically, the research methodologies that have been used among indigenous groups are notoriously inconsiderate of the researcher's powerful role, often considering them an objective and removed third party. This research assumption has led to interpretations of results that lay claims to a certain objectivity and immunity from bias and misrepresentation. In contrast, I fully recognized my role as a constructive agent in the research process who occupied a powerful position bestowed upon me as the originator and organizer of the research. In light of this recognition, I attempted to renegotiate my relationship with the communities to be sensitive to power relations, to recognize the importance of positionality, and to consider my role as a transient foreign researcher. In this section, I will describe how feminist methodologies have guided my research, identifying points of success and failure.

The guiding principles for this research can be traced to the non-domination and self-reflective principles endorsed by feminist geographers. (Rose 1997; Smith 1999) Feminist theory focuses on, and makes explicit, tacitly accepted frameworks of domination, especially those that subordinate and mute what might be considered a female perspective. From this body of theory, a methodology has arisen that identifies structures of domination and subordination extending far beyond male-female gender relations, and addressing themes as diverse as epistemology, structuralism and post-colonialism. (Johnson 2007)

“Positionality” is a concept that identifies the researcher as an individual who brings his own preconceptions, status, power, and authority to a research context, whereas “reflexivity” is a concept that encourages the researcher to reflect on his positionality. According to Gillian Rose, reflexivity is “being advocated ... as a strategy for situating knowledges: that is, as a means of avoiding the false neutrality and universality of so much academic knowledge.” (Rose 1997:306) Although it is difficult to be truly self-reflective – let alone clearly understanding the lives of others – it is important for the researcher to reveal tacitly accepted and explicit power relations that might affect the research processes and outcomes. These concepts have been brought to the fore by feminist researchers and are of particular relevance for research involving indigenous peoples whose perspectives have historically been marginalized and muted in comparison to extra-local interpretations.

3.6.1 Positionality of a *Mergi*

I am known among the Kuna as a *mergi*, which is an abbreviation for ‘American’. Outsiders are alternatively referred to as *waga* or *sichi* – *waga* signifying a non-Kuna Panamanian, and *sichi*, referring directly to the skin-color of Afro-Antilles Panamanians. These are somewhat pejorative terms of reference that reflect a long historical struggle over land, resources, and employment. As a somewhat neutral reference to American features, *mergi* carries more positive connotations related to recent historical interactions wherein Americans allied themselves with the Kuna both during the construction of the Panama Canal and during the Dule Revolution.⁸

⁸ During the *Dule* Revolution the Kuna exiled Panamanian police. This event is said to have been largely responsible for the extensive and unprecedented land rights granted to the Kuna. The intervention of an anthropologist, James Wright is attributed an important role in pacification of a Panamanian backlash and the eventual negotiation of comprehensive land-rights. (Howe, 1986)

Reflecting on my position as a *mergi*, despite a somewhat neutral standing compared to other outsiders, I am commonly seen as an ‘expert’ because of my financial, academic and institutional privileges. Indeed, during introductory meetings, prior to hearing the full research proposal, leaders often said such things as: “an expert is here to tell us what is wrong with our cacao, I hope that everyone will work with him.” Because of my expert status, a power imbalance was immediately created whereby I was granted authority to define the research and to determine how it would be conducted.

Rose suggests that power relations play an important role in the research process, especially when working with marginalized peoples as a “privileged” foreigner. (1997:307) Geographic mobility, financial facility, institutional affiliations and access to outside information often contribute to a power imbalance in the research relationship where the researcher decides which questions should be asked, to whom they should be asked, and how they should be asked, all the while occupying an authoritative role.

3.6.2 Renegotiating Position

Because of my position as a privileged, academic *mergi*, I was initially afforded a great deal of freedom in the research process. However, upon elaboration of my methodology, community leaders saw that while this project was a component of my academic responsibilities, it could also be aligned with local interests in developing a dialogue on *siagua*, a plant of significant but compromised cultural importance. It was expressed repeatedly that because of my commitment to transparency, clear interest in Kuna culture and relevant research questions, I was considered to be an ally in the defense of Kuna independence and tradition. Indeed, local elders felt that the process of selecting respondents for semi-structured interviews by committee deviated dramatically from

previous research by others, and they applauded the opportunity this study provided them for self-representation, an indication of power returned to the community.

The community members in attendance at local *congresos* saw the research project as a gesture of support and an opportunity for achieving local objectives rather than a simple academic requirement that I would fulfill by talking with locals. At an introductory *congreso* meeting in *Myria-Ubgigandup*, where 30-50 community members were present, Domingo Diaz and I presented the proposed research project and discussed why we were interested in the changing status of cacao. At all such meetings, it was difficult to make people understand that we were not interested in offering some sort of infamous 'capacity-building' project, which usually involved large influxes of development project money. After this became clear, locals became optimistic and animated about our simple questions involving *siagua*. After much discussion about methods, compensation, duration of our stay and the reason for my interest, one intervention seemed to secure the proposed research. The speaker asked the whole *congreso*: "Lets be honest, even though *siagua* is the most important plant to us all, which one of you is going to travel around asking our elders what they think about our changing ways? He [the researcher] has much more facility to do this. We can't afford to stop working for three weeks to paddle here and there talking to our elders. He is here offering his hand. He will do this for us." The people whispered among themselves, resulting in what would prove to be unanimous permission to carry out the investigation.

Although the local people in attendance at the *congresos* were very interested in the research project and eventual results, very few of the questions were innovated locally. This posed a methodological question for me: At what point in the research

process do the researched have the power to affect and analyze findings? Indeed, by virtue of the researcher's facility (financial, temporal, and methodological), the "final power of interpretation" (Rose 1997:307) is often seceded by default to the researcher.

I attempted to mediate this final power of interpretation by facilitating local interpretation and alteration of my research results using two main approaches: redemption of interview recordings, and public consultation regarding the findings. Since interview recordings included my questions (in Spanish), the respondent's answer (usually in *dulegaya*) and Domingo's interpretation (in Spanish), my understandings (and misunderstandings) were subject to community criticism and reevaluation, a process that past ethnographic works have neglected. Public consultations on my findings represented a public forum for locals to critique the analysis that I had proposed. During these meetings, locals from all three communities seemed to agree with the findings and used them as a springboard for discussions of how their respective communities would begin to take an active approach to dealing with the changing availability of cacao.

My research involvement in communities extended far beyond simple formal and informal interviews and participant observation. Consider the following examples: As Domingo and I walked through the maze of community paths one day, we heard a woman's voice from behind a thatch wall jokingly sighing, "I wish I were drinking *siagua*". On occasions, we encountered one of the school children who had begun a cacao seedling project in honor of the *siagua* research, and various elders who had some burning thoughts to share about cacao including how much cacao they used to consume as children. Community leaders repeatedly expressed a gratified optimism about the research, often informing us of locals who had, since our arrival, begun caring more for

their cacao trees. *Saila*, Roy Rogers, from *Myria-Ubgigandup* said, “I am glad that you have arrived. I feel like a broken record always telling people the same things. Now you are here, it is clear that a new voice with the right questions has awoken people’s spirit”.

Chapter 4 - Results

4.0 Introduction

It has been suggested that certain local species are of such deep importance that their loss would “entail significant cultural disruptions.” (Cristancho 2004:155) Results from past research (Barnes 2005) suggested that cacao was important in a number of different cultural contexts, and that its loss had the potential to undermine fourteen of the Kuna’s most important, and decidedly cultural manifestations. (Barnes 2005) In response to those findings, this research was carried out in a way that was sensitive to the Kuna’s social and historical context, and the resulting analysis reflects the input of three Kuna communities. As mentioned in Chapter 3, community members from all three study-communities responded in resounding agreement to the interim conclusions presented in February of 2008.

4.1 Outline

In this chapter, I look at the changes in cacao’s availability in terms of its influence on Kuna culture, with specific reference to fourteen of the culturally important contexts within which cacao is used. After a brief overview of the expected and actual results in Section 4.2, the chapter is divided into three sub-sections, which correspond to Cristancho and Vining’s tenets of CKST. (2004) These sections thematically consider cacao’s use in Section 4.3, availability in Section 4.4, and its strategic role in Kuna culture in Section 4.5. I address ‘use’ in terms of how cacao is referred to; whereas ‘availability’ and ‘strategic place’ are invoked to focus on the dynamic and hypothetical nature of cacao’s presence in Kuna communities. The discussion in Section 4.6 considers

whether or not cacao can be considered a Cultural Keystone Species and the influence of cacao availability on Kuna culture.

4.2 Overview of Expected and Actual Results

According to the version of CKST described in Chapter 2, a cultural keystone is so important that even a small change in its abundance could cause large changes in a number of other cultural contexts. In this research project it thus becomes important to gauge the local change that has occurred in the abundance and availability of cacao as it relates to the continued performance of various cultural activities. Presumably, even a slight change in the availability of cacao can cause large reverberations throughout the system to which it is so important. We would thus expect to see reduced, or compromised performance of cultural activities like the *inna suet* (strong drink ceremony), or the *sia igar* ('the way of the cacaos' curing ceremony), resulting from a slight reduction in the availability of cacao. Figures 4.1a&b illustrate the links between cacao and selected cultural practices.

In semi-structured interviews, I found that although the uniformly acknowledged primary importance of cacao has not changed, the frequency and form of actual cacao use has been constrained, and in some cases, abandoned, due to its limited availability. Questionnaires revealed that involvement and success in the cultivation of cacao has undergone a dramatic decline since a time when it was standard for individuals to have at least five productive and well-maintained cacao trees. However, changing availability is not seen as an uncontrollable process, but rather, one that is determined by Kuna

Figure 4.1 a,b Elaborated Cacao Use-Contexts

Derived from (Barnes 2005)

agriculturalists, external cultural pressure, and the diseases that attack cacao trees – referred to as malignant spirits, or *bonigana*. Although the limited availability of cacao is related to the abandonment of applications such as revitalizing beverages, its ceremonial uses endure because of a local insistence on the procurement of cacao from distant markets. However, CKST would not have foreseen the resourcefulness exhibited by the Kuna, who have addressed local shortages by acquiring cacao through national and international markets. The virtual disappearance of cacao served as a powerful lens through which local people reflected upon the many ways in which Kuna lifestyle and livelihood has changed and will continue to change.

4.3 Species use by humans: What constitutes *siagua* (*Theobroma cacao*)?

Cristancho and Vining propose that “species use by humans” corresponds to Paine’s focus on a species’ “activities”, but offer little explanation of what species use actually refers to or how it differs from the structural role that a keystone occupies. (2004:155) In this research project I have inquired about cacao’s use by focusing on identifying first how cacao is referred to, and which form of cacao is used in Kuna cultural contexts.

Because indigenous epistemologies do not necessarily reflect the same Cartesian hierarchies as Western taxonomy, Bloch proposes that indigenous people may conceive of intentionality and ethnobiological classification in an entirely different way than Westerners. (Bloch 1998:50) For this reason, it is worth noting, what *Theobroma cacao* means to me may not be what *siagua* means to the Kuna. Indeed, soon after beginning the investigation, I realized that when Domingo and I discussed cacao using the generic

nomenclature *sia*, terms of discussion were seldom clear, and respondents often demonstrated divergent ideas of what was being referred to.

Cacao derivatives are increasingly present in Kuna communities in a diversity of forms, due largely to increased market access. Nesquick, Cocoa Corona, dried cacao beans, and cacao fruits (see Figure 3.2 for cacao identification images) tend to be linguistically signified using the generic modifier '*sia*'. It was thus important to begin every interview with an understanding of how locals refer to cacao in its variegated forms. This proved an effective way to begin semi-structured interviews, with a dialogue that was both sensitive to the diversity of forms of cacao and one that was focused on the forms of cacao most relevant to contemporary Kuna cacao use-contexts.

Following the first two interviews, it became clear that respondents desired some indication of geographic origin prior to naming the images in Figure 3.2: Cacao Identification Sheet. Respondents were asked to identify 13 different forms of locally available cacao based on a sheet of color images that was separated thematically into two sections – cacao from outside (i.e., from Panama or Colombia), and cacao from here. Eight of the thirty respondents were unable to complete the identification due to visual impairment; others were aided by the provision of reading glasses. Recognition issues involving scale, clarity, and familiarity with different forms of cacao sometimes caused a respondent to skip certain images, particularly image #13 (see Figure 3.2).

Only certain images were consistently referred to in the same way. Those images that consistently evoked the same names included: dried cacao beans, cacao in a plastic bag, cocoa powder, and the cacao pod – referred to respectively as the following:

- *siagua dinagwat* (dried cacao beans)
- *siagua (dinagwat) plastico* (dried cacao beans in plastic bag)
- *siagua ubilet* (cocoa powder)
- *siagua guagualet* (cacao pod or fruit)

Although people generally referred to the image of dried cacao beans in the same way whether the cacao was accompanied by a plastic bag or not, the addition of a plastic bag often spurred commentary about the difference in quality between Kuna cacao beans and those that arrive from non-Kuna lands. People often remarked that the *siagua plastico* (cacao-plastic) was of lesser quality and that it was often rotten and inedible, despite its high price. The defatted cacao powder, commonly referred to as *sia ubilet*, cocoa, or by the brand name ‘Cocoa Corona’ inspired a chuckle in most people who tended to comment on how children have now become accustomed to consuming sweetened cocoa drinks rather than the traditional *siaguanis* beverage, made from dried beans.

This exercise was a valuable segue into developing a clearer individual understanding of which form of cacao is necessary for Kuna ceremonies, and was especially relevant considering the diversity of different names that people associated with the thirteen images. Respondents were asked to identify which form of cacao is necessary for the most common local cacao use-contexts rather than presuming that the generic *Theobroma cacao* tree itself is required. Although my past research left me with a clear impression that cacao beans (derived from the cacao fruit) are the part of the tree

that is used (Barnes, 2005), I provided the opportunity for respondents to reveal any processual nuances of which I may not have been aware.

I found that dried cacao beans (see Figure 3.3, images 6 and 7) were invariably identified as the form of cacao that is necessary for all of the cacao use-contexts proposed to respondents. Although I had imagined that *siagua plastico* might be referred to and used differently because of its geographic origin, respondents in general did not seem to discriminate. However, respondents often remarked that the cacao “from here” is both superior and preferable for a number of different reasons (see Section 4.4.1 for details).

4.4 Species Presence and Abundance: *Availability of different cacaos*

The emphasis on species abundance is central to CKST. It is understood that a number of individuals of the same species can compose a population that has a decisive influence on the community’s stability and persistence. This caveat requires the researcher to decipher both what an ideal population is and how to evaluate change thereof. I approached the theme of local abundance and availability by asking local people about how much and what forms of cacao were available. Corresponding to this, I attempted to understand how cacao’s historical abundance and availability may have changed over time.

The first way that I attempted to gauge local abundance and availability was by asking a series of questions involving what I have called ‘individual cacao holdership’ – referring to the amount and status of an individual’s cacao trees. Knowing that pathogens have caused considerable difficulty in cacao agriculture throughout Kuna Yala, I imagined that this would also be the case, to varying degrees, in the three study-communities. I delivered approximately thirty questionnaires in each community,

ensuring proportional gender representation. However, after very few interviews, it became clear that youth below the age of twenty generally claimed to have no land, and therefore no cacao holdings. For this reason, questionnaires were primarily delivered to adults.

I found that very few people claimed to successfully cultivate and harvest cacao from the forest (see Figure 4.2). Of eighty-nine respondents, only thirty-four claimed to possess any cacao cultivars. Of these thirty-four people, fifteen people claimed to have completely abandoned⁹ their trees, and eighteen people had cacao trees that were either producing very little (52 trees) or producing little (71 trees), while no one possessed a highly productive tree. Of the eighteen people who kept somewhat productive trees (123 trees), only two trees had been planted by these individuals – a basic principle of renewing successful cacao cultivation.

In terms of individual communities, where equal gender representation was approximately achieved, *Mulatupu*, *Myria-Ubgigandup*, and *Molakedup*, respectively had 15, 12, and 7 people who claimed to maintain cacao trees of approximately 30 people in each community. In Figure 4.3 (Gendered and Community Division of Cacao Holdership) the color-coded gender division of cacao holdership reveals that generally fewer women (9) than men (25) claimed to possess cacao trees. This figure also shows that while proportionally more (15) of the 89 respondents claim to maintain cacao trees (25) in *Mulatupu*, respondents (albeit fewer) from *Molakedup* (7) claim to maintain a similar amount (20) of cacao trees. Meanwhile in *Myria-Ubgigandup*, of thirty respondents, 12 claimed to maintain significantly more cacao trees (72) than the other

⁹ Respondents were often asked to qualify what was meant by ‘abandoned’ and generally described abandoned trees as being far away, covered with lianas, and to be in a state of unproductive disrepair.

Figure 4.2 Cacao Holdership Histogram

two communities. However, of all the trees mentioned, all were either producing little, or very little, making it improbable that residents of *Myria-Ubgigandup* could be considered to have ‘greater’ access to cacao.

While delivering questionnaires, respondents commented almost sarcastically that people are now relying on the work of past generations, and how this is typical of most cultivation and harvesting carried out by modern Kuna. One man commented: “When is the last time that I planted cacao? Never. We live from the toil of our forefathers. We are weak now. We don’t want to walk for days into the forest in order to clear new lands and take care of old trees.” Respondents who maintained cacao trees generally had a defeated resolve about the success of cacao cultivation, invariably commenting on, and inquiring about, the reason that so few fruits would reach maturity despite diligent care.

Because Domingo Diaz is trained as an agronomist and expert in cacao cultivation, some respondents would ask us to accompany them to their agricultural plot for advice on how to improve harvests. In the four instances that we were able to devote a full day to visiting local people’s cacao, their enthusiasm and thirst for technical solutions became clear (see Figure 4.4a for a photo of one such visit). Cacao trees tended to be covered in lianas - vines which compete for light - and plagued with pathogenic diseases, which attack the foliage, fruits, and arboreal development. Even in the cases where the trees were free of lianas, they were very unproductive and the fruits had succumbed to diseases such as witches’ broom and frosty pod rot, beginning in the fruit’s early developmental stages.

Figure 4.3 – Gendered and Community Division of Cacao Holdership

Figure 4.4 a,b: a) Tony Morris and Jeffrey Barnes in front of cacao tree – Myria- Ubgigandup; b) Kuna woman preparing siaguanis - Mulatupu

In *Myria-Ubgigandup* respondents often referred to an almost-legendary community member – the late Oleligin – who was known for his extensive cacao plantings. People consistently described him as a real worker that had no fear of the forest; they noted that he would stay alone for weeks at a time, hunting and clearing vast tracts of land for the cultivation of cacao.

The second approach that I took to understanding local abundance and availability of cacao was in the context of semi-structured interviews – where broader information was sought about the current and historical sources of cacao (specifically in the form of seeds, which was identified as the form of cacao that is important for the cultural uses). This line of inquiry garnered a historical dimension of cacao's availability, focusing on how it has changed over time, according to ten *knowers of cacao* in each community (n=30).

All 30 respondents across the three communities concurred that 50 years ago all cacao was obtained from inside the communities, often adding that even more recently the Kuna would actually sell cacao to outsiders. This stands in stark contrast to the outstanding concurrence that virtually all cacao currently used is obtained from outside of the community (see Figure 4.5: Proportion of Cacao Beans Acquired from Non-Kuna Lands). On average respondents reported that this dramatic change began approximately thirty years ago. Although many of the respondents initially had trouble expressing the time in terms of years, Domingo and I often extrapolated the time period using inferential methods, such as the time before or after the birth of respondents' children, or national political events. These testimonials correspond directly to epidemiological studies (Aime 2005), tracking the diffusion of host-specific cacao pathogens throughout the Americas.

Although cacao is currently sourced from outside markets, its availability is said to be irregular, at best – sometimes requiring community members to travel considerable distances to neighboring communities where plastic one-pound bags of Panamanian cacao are sold for a mark-up of between 50-75% of wholesale price. When asked to characterize the present availability of cacao in the community, for purchase or otherwise, twenty-nine of thirty respondents concurred that the availability of cacao is generally insufficient – twelve of whom asserted that there was presently none available within the community (see Figure 4.6 a and b for breakdown). While one person said that cacao was presently available in sufficient quantities, he clarified that he was in no position to evaluate availability because, by virtue of his curing specialties, cacao is invariably brought to him. Although households generally keep small hidden provisions this is rarely sufficient.

When asked what form of cacao is most available in communities, virtually all people responded that *sia ubilet*, or Cocoa Corona, was the most available despite its broadly recognized low nutritional value and relatively high price. The true extent to which Cocoa Corona is present in Kuna communities became clear when Domingo and I traveled throughout Kuna Yala with the captain of a Colombian trade ship, Raphael.

After consulting the number of embarkations leaving from the central Columbian port for trade with Kuna communities, Raphael estimated that each month, 64 communities populated by approximately 30,000 people, consume over \$164, 000 USD worth of defatted Cocoa Corona – representing 131,200 packages – almost four and a half packages per person per month. Furthermore, during the same trade-ship voyage, Raphael was informed that there would be a 25% augmentation in the price of 250g

Figure 4.5: Proportion of Cacao Beans Attained From Non-Kuna Lands **Figure 4.6 a: Perceived Current Availability of Cacao Within the Three Case Study Communities**

	<i>Mulatupu</i>	<i>Myria-Ubgigandup</i>	<i>Molakedup</i>	TOTALS
None	4	4	4	12
None sometimes, generally insufficient	2	1	3	6
Insufficient	4	5	2	11
Sufficient	0	0	1	1
Abundance	0	0	0	0

Figure 4.6 b: Aggregated Perceived Current Availability of Cacao

packages of Cocoa Corona, increasing its price from \$1.25- \$1.50, to \$1.75-\$2.00, depending on the community's accessibility. To provide context for this increase, consider the fact that the average cash income of a Kuna person is 2 USD per day. (Documento Preliminar : Los pueblos indígenas de Panamá: Población de Alta Prioridad para el desarrollo humano del país 2005)

4.4.1 Quality Differences

When asked about the quality differences between the cacao of today and the cacao of yesteryear, respondents generally focused on concerns about the modern consumption of purchased cacao that originates from Panamanian industrial production. Although a few respondents asserted that all cacao is essentially the same, many expressed concerns that fall into three particular categories: taste, freshness, and potency.

Taste

I suspect that cacao arriving in plastic bags will have undergone the primary stages of industrial chocolate production, specifically fermentation – a step that is integral in the primary stages of chocolate confection, but not traditionally done by the Kuna. This is said to dramatically change the flavor of cacao beans. (Young 2007) Many respondents teased that I was the only one in their community who would drink *siaguanis* made from Panamanian beans. It is felt that by the time these beans arrive in communities they are spoiled by fungus and disease. Although people reflected nostalgically on the savory and fatty cacao beverages that were a veritable staple in their adolescent diets, they asserted that this has been replaced by Cocoa Corona beverages which are very diluted and are a by-product of industrial chocolate production. Indeed, the youth are said to prefer the

taste and appearance of Cocoa Corona beverages over the fatty *siaguanis* beverage. It was asserted that because of *siaguanis* people worked hard in the past and had a much stronger libido. Despite the apparent local distain for the taste of Panamanian cacao beans, locals of all ages greatly enjoyed the *siaguanis* beverages, made from the 110 pounds of Panamanian cacao which I provided upon the presentation of interim research results in February of 2008.

Freshness

Locals repeatedly expressed concern about the freshness of cacao arriving from mainland markets. People questioned how long the cacao had been in transit and how old the beans might be, stating that the best cacao for burning and consumption is that which is freshly picked and immediately dried. Indeed, upon examining cacao beans being sold in communities, there is often yellow mold and fungus that has grown inside of the bean, suggesting that these seeds may originate from diseased or carelessly prepared fruits.

Potency

In discussing the potency of outside cacao, respondents often stated that it is simply not the same as local cacao. Respondents often compared cacaos using the word for cultural and spiritual strength – *purba* - asserting that local cacao has spirit (*purba nikka*), and other cacao does not have spirit (*purba sate*). Healers like Orlando Lopez, who is a master of the *sia igar suet* suggested that one must work much harder, and sing much longer, in order to achieve the same ceremonial results with non-local cacao. A number of people commented that the smoke derived from burning local cacao is much thicker and richer, demonstrating a greater spiritual activation and preparedness for travel

between universes.¹⁰ Locals also assert that local cacao is richer and more nutritious, providing energy, stamina, and a good work ethic. This was strongly contrasted against a modern work ethic, whereby youth and elders alike are said to have become lazy.

One quintal of raw cacao beans can be purchased from Chiriqui (the interior of Panama) for between \$125-\$175, rendering an approximate cost of \$1.50 per pound.

4.5 Strategic Place in Psycho-Socio-Cultural Structure: *Importance of Cacao and its Changing Uses*

Consistent with the central focus of EKST, I was concerned with the hypothetical and actual effects of cacao loss from the Kuna cultural system. EKST is concerned with how the changing abundance of a given species can change the composition and stability of a community's structure by virtue of the species' strategic place. In order to decipher the strategic place of a species, criteria must be chosen in order to evaluate the system's stability. I thus involved local 'knowers of cacao' as visionaries and evaluators of the dynamic role being played by cacao within Kuna culture. Although various forms of cacao remain somewhat available in communities, it is clear that local production has all but collapsed. In this context, I took a two-pronged approach to deciphering the effects of cacao's reduced availability (and thus, its strategic place in Kuna culture). First, I elicited testimonials about the hypothetical effects of its loss; and second, I gauged the actual (grounded, or performative) effects of its loss in relation to the 14 distinct cacao use-contexts.

¹⁰ Curing among the Kuna has much to do with the recuperation of lost or kidnapped souls. (Chapin 1983) Cacao is a principal ingredient that is used in finding these souls.

4.5.1 Local Perspectives on the Loss of Cacao

Respondents were asked to hypothetically consider the loss of cacao. This involved a series of questions regarding the current availability of cacao wherein people generally lamented the actual difficulties and complications involved in its acquisition. When asked about the corresponding effect this change might have had, and might continue to have, upon Kuna culture, Raphael Aries (knower of cacao) objected, “We will always find a way to get cacao – if we have to go to the end of the world, we will get it.” However, most respondents took a much more fatalistic approach to the loss of cacao, suggesting that its reduced availability and eventual disappearance could have devastating effects upon Kuna culture, livelihood, and health.

Kuna Culture

Specifically, in terms of culture, the loss of cacao was often associated with moving towards how outsiders do things. Local concerns demonstrated that the loss of cacao is perceived not only as a catalyst but also as consequence of cultural change among the Kuna. Innes Lopez asserted, “The day that the Kuna don't use cacao anymore, we will be totally absorbed into other people's ways. The Kuna customs will all be changed. We will copy everything from outside.” While Placidio Perez Aigilar stated,

Every time that we lose more cacao, our ways are being debilitated more. Our directors should be creating projects...Like the community yucca farm that we have. The same should be done with cacao. People talk about many things in the *congreso*, but not this. It has happened to me that I went to look for cacao and there was none.

In this sense the presence or absence of cacao is not considered a reality to which the Kuna are subject, but rather an iterative process within which they are complicit. In other words, cultural change may be caused by the loss of cacao; however, cultural

change is also perceived as being responsible for its loss. *Saila*, Roy Rogers states, “We have abandoned cacao for now, as we have abandoned our land, and we abandon the Kuna way” – insisting that by changing livelihood choices, the Kuna are responsible for the loss of cacao.

Respondents like Patricio Monteser often felt that if cacao is ever totally lost, “the Kuna people will die. Cacao is like a lawyer - When there is a case, cacao will defend the peoples’ spirits.” Mr. Efrain Melo says “our attitudes, ceremonies, and rites will deteriorate to the point where there will be no more.” Marianella Lopez similarly suggests that “Kuna culture will go on being lost. There will be no more of our ways if cacao is no longer here. We will be left with nothing.” These respondents directly linked the continuation of Kuna ways and spirit to the availability of cacao.

Kuna Health

When asked about the link between cacao and Kuna culture, many respondents chose to talk about health, expressing a sentiment that Kuna culture is tightly bound to curing and wellbeing. Indeed, the spiritual, social, and medicinal aspects of Kuna culture are woven together in a seamless relationship that is, in many ways, supported by cacao. As mentioned in Section 1.2, for the Kuna, health and curing involves two distinct spiritual realms whereby sickness is usually a manifestation of a spiritual meddling or abduction. In this context, cacao acts as an agent in the ceremonial search for and reinstatement of one’s spirit.

Respondents related cacao’s loss to the lost well-being of Kuna people – particularly in terms of health. Inouler Bonilla asserted,

When someone is sick, without cacao no one's soul will be found and reinstated. Cacao is number-one; principal at all levels. I have heard that in *Armila*¹¹, there are no more botanical specialists left, and they don't do these things any more. That which helps us is the health center, but that is only a part... But, I think that we would be bad [without cacao].

Bonilla further suggests that although health centers help, the Kuna's activities – spiritual and ritual activities depend upon another dimension that is integrally supported by and accessed through cacao. For this reason, he cautions against the direction of other Kuna communities that no longer have botanical curing specialists. Indeed, Freddy Perez says that when “a child becomes sick he will die with a fever if we do not have cacao. Our culture will go on being lost – our rites, customs, and ceremonies.”

In one instance, community leader, *Saila*, Roy Rogers ironically compared the Kuna's neglect of cacao to the recent Western discovery of cacao's health properties published by Hollenberg et al.(1997) He asserted that “if it goes on like this, our customs, habits, and ways, will go more towards the *wagas* (imitating them) and our culture will go on dying.” He continued, “In our chants, our ceremonies, etc... in all of this, cacao is number-one. What has gotten into the minds of the Kuna such that we are forgetting cacao? Even the *wagas*, they are using cacao to do smoke cleansing, or something like medicine...” Rogers also proposes that while the Kuna are carelessly forgetting the fundamental importance of cacao, even the “*wagas*” (pejorative) are beginning to understand its value and harness its power.

Orland Panis Morales discursively separated the fate of cacao from other plants, and linked it to the health and cultural survival of the Kuna. He states, “Cacao is like no other plant or food for the Kuna. It is not like maize, or others. It is the center of Kuna spirit. If someone falls ill, they must find cacao. Physically, cacao is being debilitated,

¹¹ *Armila* is on the western extremity of Kuna Yala and borders Colombia.

and culturally the Kuna are being debilitated.” Panis Morales argues strongly that the Kuna’s cultural survival is contingent upon the survival of cacao. This quote suggests that along with the weakening of local cacao, Kuna culture is also being compromised, and that locals are intrinsically aware of this.

Kuna Livelihood and Dependency

The loss of cacao was often related to growing economic dependency and changes in traditional livelihood practices. *Saila*, Roy Rogers said “the use of cacao is most affected by money. It is easier: If we have money today, why not buy? This affects us most. I work, and I have my money... we are moving towards this ... yes, the Kuna will still exist but we will totally change.” He problematizes the transition between cultivation and purchase of cacao, suggesting that although people may be able to acquire cacao, the lifestyle and livelihood formerly attached to its cultivation will be lost. In this sense cacao is not only being related to ‘cultural’ contexts within which it is used, but also to the processual dimension of its cultivation and harvest. Criselda Areis recounted, “I remember when we would harvest cacao; the whole family would be involved. Everyone would help. It was a good time that could last days. Everyone had a role, and even the children cleaned cacao beans while my father harvested, and our grandparents processed and dried the beans.” Wardat Martinez dismally concurred,

Now we are imitating and buying everything, we have moved towards the *wagas*. I want to die now. We are losing *siagua* and people don't understand what is really happening. I want to die thinking of the past and all of the changes that are happening. My father always said that the *wagas* would buy us, and now it is happening. If the *wagas* don't invade our territory, they will invade our mind. This interview is over.

These words aroused a great deal of emotion among the people of Wardat’s household, which had feared her death, only days before the interview. While this abrupt

end to the interview was daunting, it can be related to both my identity as a *waga/ mergi* researcher, and the strong feelings aroused by a discussion of outsiders' complicity in the very changes that she lamented.

Kandur, Ercaldo Morales remembers, "People used to be proud of their ability to produce cacao. When there would be a strong-drink (*inna suet*) ceremony people would be burning cacao in the streets, almost like a competition – burning large clouds of cacao." Siaguaru Perez asserted, "*siagua* must be bought (*baker kebe*)," and elaborated:

We are totally reliant on others from outside...In *nargana*¹², those who do not use cacao and the related practices, this will happen to us too. When a child is born, and cacao is not burnt, the child is susceptible to various diseases, and will be less intelligent. The children are born now with mental deficiencies... Abandonment of cacao is abandonment of the legacy of our elders. We are forgetting all of our ancestral knowledge along with the rejection of the forest.

Saila Inaouler Bonilla shared this sentiment, commenting on the irony of the Kuna's current dependence upon outsiders for cacao:

Before, there was abundance of cacao cultivation and production. If someone tells you that there is cacao production here, they are lying to you. No one is taking care of them, and traditionally we used to get cacao from our neighbors and family members. The cacao now comes from Costa Rica, Changuinola, Chiriqui... There are cacao trees, but there is no regeneration, nor are people caring for them. It is not only cacao that is abandoned, but almost everything from the forest... and the sea. There is cacao in the community, but we are buying fish, and green bananas! We are acting as if we had no territory, the way that we are buying things from outside.

This previous series of testimonials shows that cacao occupies a deeply important place in Kuna culture and identity. Although its local disappearance has been somewhat circumvented by access to national markets, the change represents an alarming reminder

¹² *Nargana* is one of the communities that was amenable to Panama's acculturation project. (Howe 1998)

about broader themes of cultural survival, livelihood transition, and economic dependence.

When asked if the changing availability of cacao has affected the frequency of cacao-related ceremonies and other uses, many people initially misunderstood the question – thinking at first that they were being asked if the use of cacao would eventually end. They often answered immediately and unequivocally, ‘no’. Indeed, *Vocero* Raphael Arias confidently assured us that the Kuna will always find a way to access cacao. However, when my focus on frequency (as a non-binary question) became clear, respondents casually commented on various, and sometimes corresponding, domains within which cultural applications of cacao have changed along with availability. In Figure 4.7, I have thematically divided and tallied the number of respondents that mentioned one of these five contexts of change, grouped according to community, and combined.

Figure 4.7: Unsolicited Context of Change

Unsolicited Context of Change Mentioned	Tally of individuals mentioning each context			
	<i>Mulatupu</i>	<i>Myria- Ubgigandup</i>	<i>Molakedup</i>	<i>Combined</i>
Delay of ceremonies	2	1		3
Smoke protection	4		4	8
Beverages		2	2	4
Amount used		3	1	4
General ceremonial frequency		1		1
Preemptive purchase	3	6	5	14

People often talked about having to make adjustments to the contexts within which cacao is used and the timing of use. During the *inna suet*¹³, the *Kandur* reported being much more judicious with the periodic addition of eight cacao beans to the *sia nala* braizers, which are integral in protecting the Kuna from malignant spirits during this prominent ceremony. *Kandur*, Ercaldo Morales, asserted that sometimes the *inna suet* would have to be delayed by 3-4 days, and in some cases, shortened because of inadequate access to cacao. He suggested that one-hundred pounds of beans would be the minimum necessary for the successful performance of this ceremony, and that he had sometimes refused offers to preside over the most prestigious of such events, for lack of cacao. He also suggested that more cacao must now be used because the purchased cacao makes much less smoke, and thus possesses less power. Other participants in the puberty ceremony, such as the *Sichi Guanet*, Patricio Monteser, affirmed, “I need at least eight cacao beans, one boiled egg, and two plantains, and without that I will not carry out the ceremony.” He explained, “to open communication with the *jagua* [Itn. *Guinepa americanus*] tree, cacao must be burnt. Without this, we will be in danger from the tree’s angry spirit.”

The contexts mentioned by people provide an idea of the diverse and sometimes shared impressions about the relationship between cacao’s availability and the frequency of cacao-related uses. Although some respondents were not able to categorically identify contexts that may have changed in accordance with cacao’s availability, they expressed a belief that cacao uses should endure despite changes in its availability. Whereas respondents from *Mulatupu* and *Molakedup* expressed a concern about the status of and

¹³ Often referred to as the ‘chicha fuerte’ or ‘chicha brava’ (Spanish for Strong Drink) ceremony, celebrates and ritualizes young girls’ metamorphosis into young women.

frequency of smoke protection, this should not imply that the status of smoke protection was unimportant to the ten respondents from *Myria Ubgigandup*, but that they chose different examples to illustrate the effect of cacao's availability upon the frequency of cacao uses. Indeed, those from *Myria-Ubgigandup* focused more upon the changing prevalence of cacao beverages and the quantities currently used in ceremonies.

Although the contexts mentioned were not exhaustive and casually suggested as those representing an outstanding concern for individual respondents, this served as a good segue into a categorical inquiry about the change of the Kuna cultural institutions that depend upon cacao for their successful performance. In the following section, I use what I refer to as 'grounded measurement techniques' as a way to elicit the historical changes occurring in the customary uses of this important plant.

4.5.2 Grounded Measurement

Whereas in the last section, I discussed how respondents were asked to hypothesize about the links between cacao and Kuna culture, this section explores whether, and how the community-chosen proxies of cultural continuity – what I refer to as cacao use-contexts – have endured in a context of cacao's changing availability. Although cacao's role in the Kuna cultural system is clearly important, keystone theory calls for tangible ways to measure the results of species loss from a given system. In this case, respondents were asked to evaluate whether, at a community level, the performance of cacao use-contexts has endured. Locals were asked to evaluate the present and historical community-level prevalence (continued practice) of cacao uses by evaluating if they are/were indeed performed with the use of cacao when called for. Disappearing cacao uses indicate a compromise of the Kuna cultural system, whereas endurance in the performance of

proxies would be emblematic of continuity in the Kuna's core cultural institutions. Stated otherwise, because of cacao's irreplaceable role in the 14 contexts, endurance of its use, when prescribed, is emblematic of the performative continuity of Kuna cultural institutions. This was made clear in the first meetings with communities wherein there was unanimous community support for the research based on this very premise.

The 'knowers of cacao' reported that in the past, when there was an abundance of cacao, all fourteen use-contexts were always performed when called for. However, when asked about the current status of these same use-contexts, certain uses have been altogether abandoned whereas others have endured. Each respondent individually evaluated the historic and present status of cacao-use contexts 1-14 (see Figure 4.1a for elaborated contexts 1-14), and their responses were thematically coded according to the following response-possibilities, or options:

- A) Currently the use is **always** performed when called for, and was always before¹⁴
- B) Currently the use is **sometimes** performed when called for, but was not before
- C) Currently the use is **not** performed when called for, but was always before
- D) Currently the use is **not** performed when called for, and was not before
- E) Currently the use is **sometimes** performed when called for, but was always before

Cacao use-contexts that locals characterized in terms of options 'E' and 'C' would respectively be considered in 'transition' or 'lost', whereas one that is characterized by option 'A' is a use that has not undergone a historical change in its performance, when it is called for – thus 'maintained'. Options 'B', and 'D' represent the possibility of a non-traditional cacao use that has either become common or remains locally unused.

¹⁴ "Before" was considered to be approximately 30 years ago – corresponding with local estimations of the time when cacao was abundantly available.

Figure 4.8 demonstrates the frequency with which individual ‘knowers of cacao’ (n=30) deemed the status of cacao use-contexts 1-14 to fall into one of the categories detailed above. The numeric code of these cacao use-contexts corresponds to Figures 4.1a and 1.2. Figure 4.8 thus tracked how the frequency with which people corresponded and differed in their estimations about the local status of different cacao use-contexts. This focus on frequency of correspondence recognizes that some people will invariably have different ideas about local reality. That is to say, that while some people will consider a cacao use-context compromised, others may consider it to be uncompromised. In this sense, the status of a distinct cacao use-context can be considered less disputed if people frequently bestow the same status thereupon – indicating at least a degree of consensus. However, if local impressions are more evenly distributed across options, it is possible that the use’ status might be considered either contested or in-transition.

4.5.3 Endurance and Loss of Cacao Uses-Contexts

In Figure 4.8, the light-blue tally-bars represent the frequency with which ‘knowers of cacao’ deem certain contexts to have endured or to have been maintained. In ten of the fourteen different contexts, over 20 respondents agreed that cacao continues to be used when called for. The red tally-bars represent the frequency with which ‘knowers of cacao’ deem certain contexts to have been lost, while the yellow bars indicate transition. In only three different contexts, over twenty respondents seemed to agree that cacao use-contexts have been lost. Coincidentally, all three of these cacao use-contexts (5, 6, and 8) are consumptive uses that require substantially more cacao than the others. In the case of use-context #9, Figure 4.8 indicates that 19 respondents considered its use to be lost, six considered it to be only sometimes done, while only five respondents considered

Figure 4.8: Status of Distinct Cacao Use-Contexts

the cacao use-context to be performed when called for. It is thus safe to say that cosmetic use of cacao (#9) is becoming less prevalent, or is not regularly done according to 25 of 30 respondents.

Cacao use-contexts that have been lost – *siaguanis* (#5 cacao beverage 1), *oliqua* (#6 cacao beverage 2) , *madun* (#8 cacao dessert), and *wuagar magetgi* (9# cosmetic cream) – are all consumptive uses with important roles. It is said that the Kuna would historically consume *siaguanis* and *oliqua* on multiple occasions throughout the day, commonly offering this beverage to household visitors. However, according to *Saila*, Osvaldo Garcia Ben, confection of enough *siaguanis* to offer to family and visitors, would require at least one pound of cacao beans each day – an unrealistic expenditure for Kuna families with a restricted income. Garcia Ben suggests that instead of *siaguanis*, families are now consuming “cocoa” beverages that are made by combining one half package (125 grams) of Cocoa Corona, water, and approximately a pound of sugar. He commented that while children have grown accustomed to this beverage, the vitality and energy traditionally provided by *siaguanis* has clearly been lost.

All of the contexts that seem to have endured are ceremonial, and tend to require significantly less cacao beans than the consumptive contexts. To give three examples, the *sia igar*, requires the shaman to use at least 8 cacao beans to perform a short version of the song that is intended to cure fever, reinstating a person’s abducted soul. (Barnes 2005) The *Sichi Guanet* (#3) also requires at least 8 cacao beans to successfully carry out a ritual harvest of the *Guinepa americanus*. In the case of the *inna suit* (#4), where considerable amounts of cacao are required (minimum 1 quintal), *kandur*, Ercaldo

Morales suggested that the ceremony simply waits until there is enough cacao, sometimes delaying an event that often takes more than a year to plan.

4.6 Discussion

“Now we have words and no action - seeds and no tree. The disappearance of cacao opens the door for non-Kuna ways. The brazier, '*sianar*,' must always work with *siagua*. The *sianar* is made from clay (earth) and *siagua* grows in the earth. They must be together. One cannot burn *siagua* in any old pan. - although some, now do this. Some have forgotten that the tree and our land go together. The great father said that the *sianar* and *siagua* will always work together.” ~ *Saila*, Inaouler Bonilla

Despite the change in cacao's availability, the Kuna have continued to use the fruits of this plant in most of its various cultural roles. Indeed, the Kuna have not been passive observers, but have instead found ways to circumvent shortages by purchasing cacao and its byproducts through national and international trade networks. As discussed in Section 4.1, CKST would expect the loss of a species to cause 'catastrophic' cultural changes among the Kuna because of its clearly fundamental role within Kuna culture. According to the Figure 4.8, this does not appear to be the case. Instead, locals make concerted efforts to find cacao, and they seem to have strategically sacrificed more demanding uses in order to continue performance of less-demanding ceremonial applications.

The way in which cacao use-contexts have endured has, however, struck a cord among local people. Although uses endure, the processual nature of the Kuna's interactions with cacao have clearly changed. Now, '*baker kebe*' – cacao must be bought. The social institutions that narrated the sowing, harvest, and processing of cacao

are presently lost. This process is arguably as important as any of the ‘official’ ceremonial contexts within which cacao is used.

Although cacao is often talked about as the single most important plant for the Kuna, it would be hard to say that its disappearance has caused a collapse in Kuna culture. Instead, Kuna ‘culture’ seems to be alive and well. It is the changing relationship that the Kuna seem to have with their landscape that has caused the greatest concern upon presentation of results to community members.

People often expressed a shared complicity in cacao’s disappearance, suggesting that not only has cacao been taken from them by *bonigana* (malignant spirits), but also that the Kuna work ethic has changed, contributing to cacao’s disappearance. Many inquired, “If we can forget so easily about the origin of cacao and our responsibility to cultivate it, what is to become of the other plants and animals that have supported us throughout our history?”

Chapter 5 - Discussion

5.0 *Siagua* and *Nappa*

“The Creator said to *siagua*, “your eternal mission will be to reinstate and protect the *burba* (souls or spirits) of my children, *Olo Dule* (the Kuna). Nobody lives nor works alone. Everything is related and works together, between two or more forces. For this reason, I have designated a companion for your work.” So the Creator designated *nappa* (earth) to *siagua*, as a work partner. We came from no other than earth. This earth would be called *sianar* (cacao brazier). These elements, *siagua* and *sianar*, have much *burba*. Where someone is sick, always present, will be *siagua* and *sianar* – two inseparable elements with enormous powers that will be present at all levels of the difficulties that can be found among the Kuna.” ~ Ruben Tejada, *Myria-Ubgigandup*

Ruben Tejada, is qualified as a *siaduled igar*, which means that he is an official knower of *siagua*’s origin (see Appendix 5 for Spanish and English Interpretation of *Siagua*’s Origin Story). In this story, the Creator links *siagua* and *nappa*, recognizing that while *siagua* has strong mystical powers in its own right, its powers depend upon the earth’s support, which is ritualized through the use of a clay brazier (*sianar*) when burning the beans. While the relationship between *siagua* and *nappa* encodes a strong metaphor about the Kuna’s responsibility to their land, the predominant practice of purchasing cacao beans and the progressive disuse of the *sianar* have presented an equally strong metaphor for local people. Notably, upon presentation of interim research results, locals often returned to this story, comparing the separation of *siagua* from the *sianar* to the separation of cacao beans from cacao trees, and Kuna people from their land. Local people thus articulated a complex relationship between Kuna culture and the cacao, which may not have been foreseen by past elaborations of CKST.

I begin this chapter, in Section 5.1, by reflecting upon the practical value of CKST, identifying the shortcomings of its approach, and by discussing how I have

attempted to avoid them. In Section 5.2, I approach the limitations of this study by considering how community selection and local participation could have been improved. In Section 5.3, I conclude by emphasizing this project's achievements, identifying outstanding questions, and delineating potential avenues of future research. I conclude in general that despite the theoretical shortcomings of CKST, its consideration of cacao's dynamic role in Kuna culture made it a powerful framework for addressing the convergence of cultural and environmental change.

5.1 Usefulness of the CKS Framework

This research project was the first field application of a previously heuristic analogy drawn between cultural and ecological keystone species. Cristancho and Vining (2004) have explored different criteria for identifying cultural keystones, while Garibaldi and Turner (2004) have alluded to the conservation benefits that might be achieved by focusing on the key roles of what they have also called cultural keystones. In this project, I have expanded upon the analogies drawn by these scholars, elaborating and applying the original tenets of Ecological Keystone Species Theory (EKST) (Paine 1966, 1969) as a framework through which to inquire about the role of cacao within the Kuna's cultural system.

CKST has proven to be a useful framework through which to view the influential cultural role of cacao among the Kuna of three communities in the Cartí Region of San Blas, Panama. Focusing on the ways in which cacao's historical and hypothetical loss might impact Kuna culture catalyzed a discussion about the status of the Kuna's most cherished cultural institutions and their dynamic relationship with the landscape from

which cacao originates. CKST warns against the potentially “catastrophic” cultural consequences that can be caused by the loss of a locally important species. (Cristancho 2004:161) Local testimonials concurred with CKST, asserting that cacao’s loss could undermine the Kuna’s core cultural institutions. However, among the people of Cartí, ‘loss’ is conceived of in a different way than CKST would presume.

This case study has shown that despite a local ‘loss’ of cacao cultivation, many of its uses have nonetheless endured. Indeed, access to national and international markets has allowed the Kuna of Cartí to acquire dried cacao beans and cocoa powder for use in a number of cultural contexts that were formerly supported by local cultivars. This possibility was not foreseen in past elaborations of CKST, and raises a number of questions about what constitutes a ‘species’ and how to determine whether it is indeed ‘lost’.

Garibaldi and Turner’s (2004) interest in cultural keystone species resides in the environmental conservation potential that can be derived from recognizing and protecting the relationship that indigenous peoples have with local species. Cristancho and Vining’s (2004) interest resides more firmly in the cultural survival of indigenous groups. However, both versions of CKST presume a linear relationship of cause-and-effect between the loss of a local species and indigenous cultural change. This assumption takes two things for granted: first, that the definition of a species is clear, located, and static; and second, that ecological and social phenomena are naturally separate, and act upon each other in a linear and causal fashion.

5.1.1 Defining a species

For the Kuna, the cacao tree not only provides cacao beans, but also has a rich cultural history and distinct personality. However, a definition of this species and where it resides is far from clear or static. Instead, it seems that in recent history the mystical powers and character of *siagua* are derived primarily from the bean, which does not necessarily originate from local trees. Past elaborations of CKST presume that the keystone exists locally, binding those who rely upon it to the landscape from which it originates. But what happens when the species is no longer local? Does the species still merit the same attention? Can it still be considered a species, or does it become understood more as a product? This presumption about species origin and definition is rooted in the conservation focus of CKST, which presumes that indigenous cultures and environmental systems exist in static balance. This presumption is problematic because it misses the nuances of a negotiated relationship between indigenous peoples and other life forms (see Gombay 2005 for further elaboration).

It seems the Kuna have dealt with local changes in their ability to grow cacao by reconceptualizing it in terms that allow it to be separated from its local landscape. This has at once enabled a continued performance of core cultural customs, while hinting a disarticulation of their relationship with the land. The Kuna have thus demonstrated a great ideological flexibility and adaptive capacity in responding to a change in the cacao tree's presence by imbuing the bean with relatively more significance - though this, in and of itself, remains contested.

5.1.2 Separating Ecological and Social

CKST presumes a linear relationship of cause-and-effect between the loss of a local species and indigenous cultural change, purporting that the loss of a species will cause an otherwise stable cultural system to be thrown out of balance. This presumption rests on the notion that the system was actually stable in the first place, and that one environmental change can explain cultural phenomena. Although the cultural importance of plants for indigenous people is widely acknowledged, this assumption discursively separates ecological and cultural agencies as separate and predictably intersecting domains, an assumption that is uncommon among indigenous people, but characteristic of conservation rhetoric.

Indeed, locals did not see themselves as passive bystanders, responding to ecological change. Instead people tended to explain the local loss of cacao cultivars as a culturally and spiritually determined phenomena, one that has responded to (rather than caused) the Kuna's changing relationship with their land. The *boniganmar* (generically, malignant spirits, blamed for cacao's loss) are said to take advantage when there is some sort of social problem. In this sense, the *boniganmar* that have taken control of local cacao cultivation are understood as being responsive rather than catalytic agents of change. Their attack of the cacao tree is understood as being enabled by a broader local disassociation with the landscape.

This explanation challenges CKST's presumption about the directionality of how a species interacts with local culture. The loss of local cacao cultivation has not caused a collapse of Kuna culture. Instead, locals of the Cartí Region have ensured the continued

performance of most cacao use-contexts by securing basic access to cacao beans, demonstrating ideological and pragmatic resourcefulness that was not foreseen by CKST.

This study has circumvented two problematic aspects of CKST – species definition, and directionality of species influence – by explicitly recognizing them as flawed, and by integrating this recognition into a culturally sensitive research design. In terms of species definition, I elicited the ways that people refer to cacao in its various forms (see Section 3.3.2). This exercise avoided presumptions about what constitutes a species and revealed that *siagua* is considered to be much more than a tree. In terms of the directionality of species influence, I asked local people about their impressions of how Kuna culture interacts with the availability of cacao instead of simply deriving my own conclusions about how culture would respond to the loss of cacao. In this study, I consulted local people, broadly eliciting their impressions of the relationship between cacao and Kuna culture by using the CKST framework to spur discussion of locally important themes. This format did not constrain local perspectives to the restrictive assumptions previously described.

5.2 Research Limitations

Although I am content with the approach and outcomes of this research, given the experience gained, a deeper consideration of community selection and the participation of local people may improve future projects of this nature. Despite concerted efforts to identify communities with different degrees of success in cacao agriculture (see Section 3.1.2), all three communities had experienced great difficulties in the local cultivation of cacao. According to CKST, differing inter-community availability of cacao might have

lead to variations in effects on communities with different access to the plant. Unfortunately, communities in this study differed very little in terms of their access to cacao. Had I been able to locate communities with regular access to cacao, and greater success in the cultivation of cacao, results may have shown marked differences in local perceptions about the status of cacao and its cultural use-contexts.

Coincidentally, following this research project, a Smithsonian Tropical Research Institute (STRI) researcher, Kate Kirby, mentioned that in the remote mainland Kuna community of *Nurra*, people had experienced considerable success in the cultivation of cacao, despite pathogenic stresses. Originally, this might have been revealed by a series of pilot studies, searching for Kuna communities with greater access to cacao. However, researching in Kuna communities is often a complicated administrative process (see Section 3.2, for a delineation of such challenges), which limits the feasibility of such brief and casual preliminary work. Expanding the research by including a series of comprehensive pilot studies amounts to a long and involved process, which extends beyond the scope of a master's project.

In terms of participation, this project failed to capture the perspective of young people, limiting the extent to which local people had the opportunity to participate and have their perspectives represented in this research. Research can be a process whereby the construction of meaning is shared, and does not simply converge upon a single research "expert." (Greenwood 1993:178) Participatory Action Research (PAR) strives to engage local people in the execution and design of research for a number of reasons that include improved quality of results and increased applied value. Although I designed this research in a way that attempts to relinquish authority of representation (see Section

3.3.1) to local administration, these administrators had their own biases, which resulted in the exclusion of young people from the research process. I suggest that the integration of this bias has the potential to exacerbate already-strained communication between mature and young community members, and that it is an imperative issue requiring attention in future research.

Respondents under age 20 were virtually absent from both informal and semi-structured interviews, where the average respondent's ages were 40 and 56, respectively. In selecting respondents for semi-structured interviews, communities decided that in order to have the clearest perspective on current and past cultural themes, the elders would be the best and most appropriate people to consult. Indeed, the elders often asserted that young people have very little interest in Kuna ways. Local authorities also felt as though it would be unfruitful to talk to young people because of their regular absence from communities and substantial difference in historical perspective. Their absence is, in large part, due to the recent establishment of public education in San Blas, whereby young people spend much of their days outside of home-communities, away from family members, developing linguistic competence in Spanish, English, and French. While the importance of education and literacy is often acknowledged, village elders lament the disdain that young people show for traditional ways and their lack of interest in the continuation of cultural customs.

In the case of informal interviews, it quickly became clear that youth were predominantly landless, and had in many cases never actually visited the mainland, despite both its relative proximity and the daily visits of other family members. Thus, an inquiry about cacao-holdership was better suited for people over the 20 years of age.

Although young people were predominantly landless and were not considered by administrators to be qualified to discuss the status of *siagua*, they could have been more involved in the research. For instance, a PAR approach might attempt to involve local youth in the execution of interviews and questionnaires, exposing them to the knowledge of local elders by engaging them in the collection of data. However, this would have required significantly more time and resources than I was able to provide.

Domingo Diaz and I made concerted efforts to work with local schools to discuss the various cultural uses of *siagua*, and to inform local children about our reasons for being in the community. In *Myria-Ubgigandup*, children were so motivated by the initial discussion that they became interested in how to start their own cacao seedlings. Domingo and I offered a follow-up workshop, attended by over 25 children, where we offered over one-hundred cups of *siaguanis*. Not only did children savor the traditional drink, but fourteen children also began to cultivate their own seedlings based upon Domingo Diaz' vast agronomic experience. This was at once an attempt to demonstrate reciprocity with the research communities, while also a strategy to involve young people in the research process. Despite the challenges of selecting communities, and meaningfully involving young people in the research, local people took the project seriously and anxiously awaited an opportunity to discuss the results as a community.

5.3 Discussion and Further Questions

As many Kuna see it, the [environmental] problems come in part through loss of knowledge, the intimate knowledge of forest and marine environments retained by the oldest hunters, fishermen, agriculturalists, and, especially, medicinal curers. As many young Kuna abandon traditional subsistence for paid labor, either in Kuna Yala or in the city, and as almost no one under thirty seriously apprentices to learn traditional medicine, the store of environmental knowledge rapidly diminishes, and with it, the intimacy of the Kuna's connection with the natural world.

~Ventocilla, Herrera, and Núñez 1995:X

A study into the role of cacao among the Kuna contributes to academic work that acknowledges the great importance of plants and animals among indigenous groups. This study has proposed a unique way of theorizing and examining the dynamics of this relationship. CKST purports that the local loss of a culturally important species, like *Theobroma cacao*, could cause considerable cultural change. However, this case study shows that although CKST catalyzed a fruitful discussion of cacao's influential role among the Kuna, the relationship between culture and cacao does not necessarily act in such a linear fashion. Examining the uses, presence and abundance, and strategic place of cacao in Kuna culture has revealed that the Kuna are able to reconceptualize what constitutes *siagua* in order to suit a changing reality, which demonstrates an iterative and adaptive, rather than static, relationship with the tree.

While EKST has been applauded for the ecological insights that can be gleaned by looking at the role of one species within an ecosystem (Mills 1993), the same might now be said of CKST in terms of its role in better understanding cultural systems. Cultural change is an important matter for the Kuna (Ventocilla 1995), and focusing on the influential role of cacao in the Kuna's cultural system has proven to be a powerful tool for understanding the multiple scales at which cacao interacts with the Kuna's

cultural institutions. This study revealed that the loss of cacao has the potential to dramatically undermine Kuna culture, but that this potential is tempered by the Kuna's ideological and pragmatic resourcefulness.

Local people expressed a great deal of appreciation for this research, and responded in a diversity of ways to the simple questions regarding cacao and local culture. While some people called for community-wide projects to revitalize its cultivation, others simply began planting their own cacao seedlings, or removing the lianas from their unproductive cacao trees. In this way, a simple discussion of cacao's changing role spurred a great deal of local action. Revitalization of local cacao production thus seems like a logical next-step, especially considering the potential cultural, economic, and environmental benefits.

The next important question that follows concerns the nature of revitalization projects and their effects on local cultures. *Theobroma cacao* has been repeatedly identified by conservation agencies as a tropical species that stands to generate income while saving the forest. (Miller 2001; Dahlquist 2007) This focus is encouraged by the advent of livelihood-centered conservation projects and the encouragement of sustainable exploitation of non-timber forest products (NTFPs). In fact, discourses surrounding the Biological Corridor that is slated to cut through Panama have acknowledged cacao's outstanding role in the maintenance of forested land and its capacity to generate income for cash-poor, forest-dwelling people. (Miller 2001)

Cacao commercialization is one form that a revitalization effort can take. However, commercialization of a culturally important plant can be a double-edged sword. While it makes sense to focus development efforts on locally important plants,

such projects tend to entail an externally generated agenda and methodology to the conservation of biological landscapes. And although it may be attractive to cooperate on a project that is slated to encourage cacao agriculture, considering the Mopan Maya's experience with the intensification of cacao cultivation cautions against this. Steinberg (Steinberg 2002a) has pointed out that the commercialization and agricultural intensification of cacao have brought about dramatic changes to land tenure and livelihood activities among the Mopan Maya of Belize, for whom cacao has traditionally been a culturally important plant. Steinberg suggests that it is by virtue of cacao's cultural significance that such a project could be so transformative to local reality. That is, the shared importance of cacao was an attractive gateway for the onset of previously unimaginable change, such as the privatization of formerly collective land.

Considering the results of this thesis, an intensification of cacao agriculture stands to support the Kuna's cultural institutions, but also has the foreboding potential to usurp local meaning associated with cacao cultivation. Steinberg notes the transition of cacao's meaning among the Mopan Maya, from a cultural implement to a market commodity. He suggests that because of cacao's commoditized status, the nature of its local uses and cultivation has undergone significant changes. Presumably, in the context of the Kuna, such changes are also possible, and deserve serious consideration before initiating such a project.

The future of cacao among the Kuna will be subject to a number of intersecting forces involving market availability, the arrival of agricultural projects, and self-determination by local people. Simply uttering the word, *siagua*, lit up the faces of young and old people alike, invariably leading to a sincere conversation about things that

matter to the Kuna. Through conversations about a meaningful plant, a diversity of memories, concerns, and visions about the future of the Kuna people were revealed. But what is to become of the Kuna people's relationship with cacao, and the landscape from which it was born? How will local cacao use-contexts respond to further cacao shortages? In time, all of these questions will be answered.

References (Compiled by Endnote):

- Aime, M. C., Phillips-Mora, W. 2005. The causal agents of witches' broom and frosty pod rot of cacao (chocolate, *Theobroma cacao*) form a new lineage of *Marasmiaceae*. *Mycologia* 97 (5):1012-1022.
- Alper, J. 1998. Coral Reef Monitoring: Smithsonian Field Station Gets the Boot. *Science* 280 (5368):1340.
- Altamirano-Jiménez, I. 2004. North American first peoples: slipping up into market citizenship? *Citizenship Studies* 8 (4):349–365.
- Arias, R. 2008. Semi-structured Interview. Miria-Ubgigandup (Soledad Myria).
- Barnes, J. 2005. The Cultural Importance of Cacao among the Kuna of San Blas, Panama. Montreal: McGill University and the Smithsonian Tropical Research Institute.
- Bennett, A. 2003. Out of the Amazon: *Theobroma cacao* enters the genomic era *Trends in Plant Science* 8 (12).
- Bergmann, J. F. 1969. The Distribution of Cacao Cultivation in Pre-Columbian America. *Annals of the Association of American Geographers* 59 (1):85-96.
- Bloch, M. 1998. Why Trees, Too, Are Good to Think With: Towards an Anthropology of the Meaning of Life. In *The Social Life of Trees: Anthropological Perspectives on Tree Symbolism*, ed. L. Rival. New York: Oxford.
- Burnham, P. C., Ellen, R. F ed. 1978. *Social and Ecological Systems*. London: Academic Press.
- Carigan, V., Villard, M.A. 2002. Selecting Indicator Species to Monitor Ecological Integrity: A Review. *Environmental Monitoring and Assessment* 78:45–61.
- Castellano, M. B. 2004. Aboriginal Research Ethics. *Journal of Aboriginal Health* January:98-114.
- Chapin, M. 1983. Curing Among the San Blas Kuna of Panama. Phd, Department of Anthropology, University of Arizona, Arizona.
- . 2000. Defending Kuna Yala: PEMASKY, The Study Project for the Management of the Wildlands of Kuna Yala, Panama. A case study for Shifting the power: Decentralization and biodiversity conservation ed. K. Christen. Washington, D.C: Biodiversity Support Program.

- Cooren, F., Taylor, J.R. 2000. Association and Dissociation in an Ecological Controversy: The Great Whale Case. In *Technical Communication, Deliberative Rhetoric, and Environmental Discourse: Connections and Directions*, ed. N. Coppola, Karis, B. New York: Greenwood Publishing Group.
- Crang, M. 1998. *Cultural Geography*. London: Routledge.
- Cristancho, S., and Vining, J. 2004. Culturally Defined Keystone Species. *Human Ecology Review* 11 (2):153-164.
- Dahlquist, R. M., Whelan, M.P., Winowiecki, L., Polidoro, B., Candela, S., Harvey, C.A., Wulforth J.D., McDaniel, P.A., Bosque-Pérez, N.A. 2007. Incorporating livelihoods in biodiversity conservation: a case study of cacao agroforestry systems in Talamanca, Costa Rica. *Biodiversity and Conservation* 16:2311-2333.
- Davic, R. D. 2003. Linking keystone species and functional groups: a new operational definition of the keystone species concept. *Conservation Ecology* 7 (1).
- Daviron, B., Gibbon, P. 2002. Global Commodity Chains and African Export Agriculture. *Journal of Agrarian Change* 2 (2):137-161.
- Dillinger, T. L., Barriga, P., Escárcega, P., Jimenez, M., Lowe, D.S., Grivetti, L.E. 2000. Food of the Gods: Cure for Humanity? A Cultural History of the Medicinal and Ritual Use of Chocolate. *American Society for Nutritional Sciences Supplement*:2057S-2072S.
- Documento Preliminar : Los pueblos indígenas de Panamá: Población de Alta Prioridad para el desarrollo humano del país. 2005. Panama City: Government of Panama.
- Domosh, M. 2000. Cultural Patterns and Processes in Advanced Placement Geography. *Journal of Geography* 99 (3):111-119.
- Elsass, P. 1992. *Strategies for Survival: The Psychology of Cultural Resilience in Ethnic Minorities*. New York: New York University Press.
- Field, L. W. 1994. Who Are the Real Indians: Reconceptualizing Indigenous Identity, Resistance and the Role of Social Science in Latin America. *Latin American Research Review* 29 (3):237-248.
- Garibaldi, A., Turner, N. 2004. Cultural keystone species: implications for ecological conservation and restoration. *Ecology and Society* 9 (3).
- Geertz, C. 1973. *Chapter 1: Thick Description: Toward an Interpretive Theory of Culture*. New York: Basic Books.

- Gombay, N. 2005. Shifting identities in a shifting world: food, place, community, and the politics of scale in an Inuit settlement. *Environment and Planning: Society and Space* 23:415-433.
- Gomez-Pompa, A., J. S. Flores, M.A. Fernandez. 1990. The Sacred Cacao Groves of the Maya. *Latin American Antiquity* 1 (3):247-257.
- Greenwood, D. J., Whyte, W.F., Harkavy, I. 1993. Participatory Action Research as a Process and as a Goal. *Human Relations* 46 (2):175-192.
- Henderson, J. S., Joyce, R.A., et al. 2007. Chemical and archaeological evidence for the earliest cacao beverages. *PNAS* 104 (48):18937–18940.
- Henderson, R., Simmons, D.S., Bourke, L., Muir, J. 2002. Development of guidelines for non-Indigenous people undertaking research among the Indigenous population of north-east Victoria. *Clinical Ethics* 176:482-485.
- Henman, A. R. 1990. Coca and Cocaine: Their Role in "Traditional Cultures" in South America. *The Journal of Drug Issues* 20 (4):577-588.
- Hollenberg, N. K., Gregorio Martinez, Marji McCullough, Terri Meinking, Diane Passan, Mack Preston, Alicia Rivera, David Taplin and Maureen, Vicaria-Clement 1997. Aging, Acculturation, Salt Intake, and Hypertension in the Kuna of Panama. *Hypertension* 29:171-176.
- Howe, J. 1986. *The Kuna Gathering: Contemporary Village Politics in Panamá*. Austin, Texas: University of Texas Press.
- . 1991. An Ideological Triangle: The Struggle over San Blas Kuna Culture, 1915-1925. In *Nation-States and Indians in Latin America*, ed. G. Urban, Sherzer, J, 19-42. Austin: University of Texas Press.
- . 1998. *A People Who Would Not Kneel: Panama, the United States, and the San Blas Kuna*. Washington, DC:: Smithsonian Institution Press.
- Howell, S. 1998. 'May blessings come, may mischiefs go!' Living kinds as agents of transitions and transformation in an Eastern Indonesian setting. In *The Social Life of Trees: Anthropological perspectives on tree symbolism*, ed. L. Rival. Berg: Oxford.
- Hubbell, S. 2005. Neutral theory in community ecology and the hypothesis of functional equivalence. *Functional Ecology* 19:166-172.
- Jochim, M. A. 1981. *Strategies for Survival: Cultural Behavior in an Ecological Context*. New York: Academic Press.
- Johnson, J. T., and Murton, B. 2007. Re/placing Native Science: Indigenous Voices in Contemporary Constructions of Nature. *Geographical Research*. 45 (2):121–129.

- Jones, O., Cloke, P. 2002. *Tree Cultures: The Place of Trees and Trees in Their Place*. Berg: Oxford.
- Leibold, M. A. 1996. A Graphical Model of Keystone Predators in Food Webs: Trophic Regulation of Abundance, Incidence, and Diversity Patterns in Communities. *The American Naturalist* 147 (5):784-812.
- Lizarralde, M. 2004. Indigenous Knowledge and Conservation of the Rain Forest: Ethnobotany of the Bari of Venezuela. In *Ethnobotany and conservation of biocultural diversity*, ed. L. Maffi, Carlson, T.J.S, 113-132. Bronx, N.Y: New York Botanical Garden.
- Maffi, L. 2001. Introduction: On the interdependence of Biological and Cultural Diversity. In *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*, ed. L. Maffi. Washington: Smithsonian Institution Press.
- Malone, G. 2007. Ways of Belonging: Reconciliation and Adelaide's Public Space Indigenous Cultural Markers. *Geographical Research*. 45 (2):158-166.
- McSweeney, K. 2002. Who is "Forest-Dependent"? Capturing Local Variation in Forest-Product Sale, Eastern Honduras. *The Professional Geographer* 54 (2):158-174.
- McSweeney, K., Jokisch, B. 2007. Beyond Rainforests: Urbanisation and Emigration among Lowland Indigenous Societies in Latin America. *Bulletin of Latin American Research* 26 (2):159-180.
- Miller, K., Chang, E., Johnson, N. 2001. Defining Common Ground for the Mesoamerican Biological Corridor: World Resources Institute.
- Mills, L. S., Soule, M.E., Doak, D.F. 1993. The Keystone-Species concept in Ecology and Conservation. *Bioscience* 43 (4).
- Nabhan, G. P. 1994. Ironwood: an Ecological and Cultural Keystone of the Sonoran Desert. *Conservation International -Occasional Paper* No. 1.
- Nabhan, P. G. 2001. Cultural Perceptions of Ecological Interactions: An "Endangered People's" Contribution to the Conservation of Biological and Linguistic Diversity. . In *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*, ed. L. Maffi, 145 -156 Washington: Smithsonian Institution.
- Nelson, L. 1999. Bodies (and Spaces) do Matter: the limits of performativity'. *Gender, Place & Culture* 6 (4):331 — 353.
- Nietschmann, B. 1988. When the Turtle Collapses, the World Ends. In *Anthropology for the Nineties: Introductory Readings*, ed. J. B. Cole. New York: The Free Press.

- Paine, R. T. 1966. Food web complexity and species diversity 100: 65-75. *American Naturalist* 100:65-75.
- . 1969. The Pisaster-Tegula Interaction: Prey Patches, Predator Food Preference, and Intertidal Community Structure. *Ecology*, 50 (6):950-961
- Patrick, L. M. 2004. Storytelling in the Fourth World: Explorations in Meaning of Place and Tla'amin Resistance to Dispossession, Department of Human and Social Development, University of Victoria, Victoria.
- Permanent Forum on Indigenous Issues: Report on the Seventh Session. 2008. New York: United Nations Economic and Social Council.
- Posey, D. A., Dutfield, G., Plenderleith, K. 1995. Collaborative research and intellectual property rights. *Biodiversity and Conservation* 4:892-902.
- Ramos, A. 2000. The commoification of the Indian. In *Human Impacts on Amazonia: The role of traditional ecological knowledge in conservation and development in Brazil*, ed. D. A. Posey, 281-301. New York: Columbia University Press.
- Reyes-Garcia, V., Vadez, Byron, E., Apaza, L., Leonard, B., Perez, e., Wilkie, D. 2005. Market Economy and the Loss of Folk Knowledge of Plant Uses: Estimates from the Tsimane' of the Bolivian Amazon. *Current Anthropology* 46 (4):651-656.
- Rival, L. ed. 1998. *The Social Life of Trees: Anthropological perspectives on tree symbolism*. Oxford: Berg.
- Rose, G. 1997. Situating knowledges: positionality, reflexivities and other tactics. *Progress in Human Geography* 21:305 - 320.
- Ruppert, D. E. 2001. New Tribe/Park Partnerships: The Use of Ethnobotany in the Restoration of Indigenous Landscapes. *Conservation and Resources Management* 5:45-49.
- Salvador, M. L. ed. 1997. *The art of being Kuna: Layers of meaning among the Kuna of Panama*. Los Angeles: UCLD Fowler Museum of Cultural History.
- Sandstrom, A. R. 1991. *Corn is our blood : culture and ethnic identity in a contemporary Aztec Indian village*. 1st ed. Norman: University of Oklahoma Press.
- Sherzer, J. 1995. The Kuna and Columbus. *American Anthropologist* 96 (4):902-924.
- . 1997. *Kuna Ways of Speaking: an ethnographic perspective*. Austin, Texas: University of Texas Press.
- Shrumer-Smith, P. 2002. *Doing Cultural Geography*. London: Sage.

- Simberloff, D. 1998. Flagships, Umbrellas, and Keystones: Is Single-Species Management Passe in the Landscape Era? *Biological Conservation* 8 (3):247-257.
- Smith, L. T. 1999. *Decolonizing Methodologies: research and indigenous peoples*. London: Zed Books.
- Steinberg, M. K. 1998. Political Ecology and Cultural Change: Impacts on Swidden-fallow Agroforestry Practices among the Mopan Maya in Southern Belize. *Professional Geographer* 50 (4):407-417.
- . 2002a. The Globalization of a Ceremonial Tree: The case of Cacao (*Theobroma cacao*) Among the Mopan Maya. *Economic Botany* 56 (1):58–65.
- . 2002b. The Impact of Political Turmoil on Maize Culture and Diversity in Southern Guatemala. *Mountain Research and Development* 22 (4):344-351.
- . 2002c. The Second Conquest: Religious Conversion and the Erosion of the Cultural Ecological Core among the Mopan Maya. *Journal of Cultural Geography* 20 (1):91-105.
- Stevens, S. ed. 1997. *Conservation through Cultural Survival: Indigenous Peoples and Protected Areas*. Washington, DC: Island Press.
- Turner, N. 1988. "The Importance of a Rose": Evaluating the Cultural Significance of Plants in Thompson and Lillooet Interior Salish. *American Anthropologist* 90 (2):272-290.
- Urban, G., Sherzer, J. ed. 1991. *Nation-states and Indians in Latin America*. Austin: University of Texas Press.
- Velasquez, J. 2007. Personal Communication at Smithsonian Tropical Research Institute: Tupper. Panama.
- Ventocilla, J. 1997. Baba's Creation: Flora and Fauna of Kuna Yala. In *The art of being Kuna: Layers of meaning among the Kuna of Panama*, ed. M.-L. Salvador, 53-73. Los Angeles: UCLD Fowler Museum of Cultural History.
- Ventocilla, J., Herrera, H., Núñez, V., Roeder, H. 1995. Plants and Animals in the Life of the Kuna. Austin: University of Texas Press.
- Welte, C. R. 1986. The Human Context of the Interpretation of Cultures. *Anthropology and Humanism Quarterly* 11 (3):56-61
- Young, A. M. 2007. *The chocolate tree: a natural history of cacao*. Gainesville: University Press of Florida.
- Zent, S. 2001. Acculturation and Ethnobotanical Knowledge Loss Among the Piaroa of Venezuela: Demonstration of a Quantitative Method for the Empirical Study of Traditional Ecological Knowledge. In *On Biocultural Diversity: Linking*

Language, Knowledge, and the Environment, ed. L. Maffi, 190-211. Washington: Smithsonian Institution Press.

- . 2004. Ethnobotanical Convergence, Divergence, and Change among the Hoti of the Venezuelan Guyana. In *Ethnobotany and conservation of biocultural diversity*, ed. L. Maffi, Carlson, T.J.S. Bronx, N.Y. : New York Botanical Garden.

Appendix 1 -Glossary of *Dulegaya* terms:

Glossary of Kuna Terms

1. Absoget: Person in charge of mass-exorcisms
2. Anmar inmar: Our ways
3. Baker kebe: Must be bought
4. Bonigana/ Boniganmar: Malignant spirits, that are not necessarily evil, but omnipresent and meddling forces in Kuna affairs
5. Bunor mer serkuet: Birth ceremony
6. Comarca: Indigenous reserve in Panama
7. Congreso: Gathering house where political and cultural affairs are discussed
8. Dule moga: The Kuna way
9. Dule mor: Typical Kuna clothes
10. Dulegaya: literally, Kuna-speak. Kuna language
11. Fundación Dobbo Yala (FDY): Kuna-administered NGO based in Panama City
12. Homme Dumbad: Big women, or representatives of women's association
13. Inna suet: Strong drink ceremony, also known in Spanish as the 'chicha fuerte'
14. Jagua: Spanish word for *Guinepa americanus* tree
15. Kandur: The leader of the *inna suet* ceremony, otherwise known
16. Kurgin inagi eboleget siagua: Intelligence medicine (Figure 1.0)
17. La Revolucion Dule: The Kuna Revolution, explained in footnote #7
18. Madun: Desert of cacao mixed with ripe banana or plantain (Figure 1.0)
19. Mergi: American
20. Molas: Traditional dress worn by Kuna women
21. Muugi kuichit siagua in a gobet: Beverage for pregnant women
22. Nappa: Earth
23. Nargana: Highly modernized community in Kuna Yala (see footnote #11)
24. Neg berbaled: Physical world
25. Neg sanaled: Spiritual world (stratified into eight different levels)
26. Nele Kantule: Man deemed responsible, to a large extent, for the Kuna revolution
27. Nurra: Landlocked Kuna indigenous territory
28. Oliqua: Cacao beverage #2. A mix of cacao and corn

29. Onmaked: The ‘gathering’ house. Otherwise referred to with the Spanish work *congresso*, and pronounced (congre-ho)
30. PEMASKY: *Study Project for the Management of the Wildlands of Kuna Yala*
31. Purba nikka: With spirit, power or essence
32. Purba sate: Without spirit, power or essence
33. Purba: Spirit, “spiritual counterpart,” soul, essence, or culture,
34. Saila: Community leader, also the word for hair
35. Siagua dinagwat: Dried cacao beans
36. Siagua guagualet: Cacao fruit in the form of a pod (see image #1 in figure 2.
37. Siagua plastico: Dried cacao beans in a plastic bag
38. Siagua: Cacao. for an discussion of its various forms, see Section 4.3
39. Siaguanis: Beverage made with cacao (use-context #5)
40. Siagua ubilet: Cocoa powder
41. Sianeale: Cacao doctor
42. Sia: Name of *Sia nele*, and modern modifier for cacao-related materials
43. Sia igar: ‘Way of the cacaos’ curing song
44. Sia igar suet: Long version of the ‘way of the cacaos’ curing song
45. Siagua kammu suet igargi eboleget: Flute search (Figure 1.0)
46. Siagua ogub maket duleburguis satgi: Grieving ceremony (Figure 1.0)
47. Siagua ogub maket duleburguis gas urba: Post-mortem ceremony (Figure 1.0)
48. Siaguagi wuaet: Cacao smoke-bath (Figure 1.0)
49. Sia dulet: Person who is knowledgable about cacao
50. Sia nele: Cacao doctor
51. Sichi: Black
52. Sichi Guanet: Person responsible for the puberty ceremony
53. Ukupseni: Community in Kuna Yala, directly translated in to little beach
54. Vocero: Spanish word which is used to refer to a community member in charge of repeating and clarifying the community leaders’ communications
55. Waga: Non-Kuna person
56. Wuagar magetgi: Cacao cosmetic cream (Figure 1.0)
57. Yagua: Young woman

Appendix 2 - History of the Research Process

An Eight-Phase Schedule of Research Activities

Phase 1: Preparation for Field Work (Ottawa: March - mid-April 2007)

- Submit proposal to Carleton University for ethics review
- Arrange VISA, airfare, logistics
- Review literature
- Continue organization of research with FDY
- Develop job descriptions for interpreter (local research assistant)

Phase 2: Community Introduction and Refining Focus (Panama/Kuna Yala: mid-April - May)

- Establish transparent criteria, and select three research communities
- Begin contractual discussion with field guide – Domingo Diaz
- Visit Kuna Yala to present interim research objectives and questions to local Traditional *congresos* in *Cartí Mulatupu*, and *Myria-Ubgigandup*.
- Wait for comments, concerns, suggestions, about research
- Make adjustments to research contract and objectives in accordance with preliminary meetings

Phase 3: Begin investigations in Mulatupu (Kuna Yala: June - July)

- Ensure permission from Traditional Congress for temporary residency within community
- Secure residency, and negotiate costs of living and research
- Request a gender-proportional list of potential local respondents who would know about cacao and its status (semi-structured interview respondents – *knowers of cacao*)
- Individually request participation of *knowers of cacao*, explaining terms of consent and confidentiality
- Begin the delivery of informal questionnaires
- Begin semi-structured interviews
- Accompany individuals to their land for participant observation of cacao cultivation
- Present preliminary results to community stakeholders and establish date for follow-up

Phase 4: Begin investigation in Myria-Ubgigandup (Kuna Yala: July-August)

- Repeat steps in phase #3
- Propose research to local *congreso* of *Molakedup*

Phase 5: Begin investigation in Molakedup (Kuna Yala: August-September)

- Repeat steps in phase #3

Phase 6: Analysis and Dissemination (Ottawa: September-January)

- Analyze data
- Prepare preliminary results for presentation to La Fundación Dobbo Yala and local *congresos*
- Begin writing thesis

Phase 7: Recapitulative visit (Panama/Kuna Yala: February 2008)

- Coordinate presentation and synthesis of interim results with Domingo Diaz and present to three communities

- Request feedback and criticism of preliminary conclusions
- Request permission to present and publish results, as discussed
- Submit digital copies of semi-structured interview recordings to communities on compact discs, with plasticized pictographic legend
- Submit digital copies of semi-structured interview recordings to Fundación Dobbo Yala on DVD including respondent portraits and names

Phase 8: Preparation of thesis manuscript and publications (Montreal: March-December)

- Present paper entitled “*Cacao – A cultural Keystone Species Among the Kuna of San Blas*” at AAG 2008 Conference in Boston, MA
- Request feedback from IPWG
- Continue preparing thesis manuscript
- Submit/ defend manuscript (December 2008)
- Send final copies to Fundación Dobbo Yala and study-communities

**Appendix 3 - Research Contract Between La Fundación Dobbo Yala
and Jeffrey Barnes**

Organización no
Gubernamental
sin fines de
lucro.

FUNDACION DOBBO

R.U.C. 1696 – 0013 - 001670
Tel/Fax: 261-7229

Por el
Desarrollo
Indígena y la
Conservación
del Medio
Ambiente

CONVENIO DE INVESTIGACIÓN

Dentro del Marco de los objetivos de desarrollo de la **FUNDACION DOBBO YALA**, como Organización Ambiental, representado por el Licenciado Eligio Alvarado Paredes, Director Ejecutivo y Representante Legal, en adelante denominado LA FUNDACIÓN, por una parte, y por el otro, **Jeffrey Barnes**, candidato para Maestría en la Universidad de Carleton en Ottawa, Canadá, con numero de pasaporte xxxxxxxx, en adelante denominada EL INVESTIGADOR, ACUERDAN EL PRESENTE CONVENIO DE INVESTIGACIÓN, el cual, se firma el 7 de mayo de 2007.

CONSIDERANDO:

- a. Que el investigador propone hacer un estudio que “BUSCA INVESTIGAR EL USO Y SIGNIFICADO CULTURAL DEL SIAGUA (CACAO, O THEOBROMA CACAO), Y SI EL MISMO PUEDE CONSIDERARSE UNA ESPECIE CULTURAL CLAVE ENTRE TRES COMUNIDADES KUNAS DE COMARCA KUNA YALA, (SAN BLAS) PANAMA” para obtener su titulo de Maestría en la Universidad de Carleton en Ottawa, Canadá.
- b. Que este tema es una que maneja la Fundación la cual está interesada en tener más información para poder desarrollar proyectos y acciones estratégicas en el futuro.
- c. Que la Fundación tiene mucha experiencia en la región donde el investigador propone hacer el estudio.
- d. Que el investigador, habiendo declarado a la Fundación que posee las aptitudes profesionales requeridas, ha convenido en compartir los resultados de su estudio con la Fundación y de trabajar siguiendo los términos y condiciones estipulados en este convenio.

Las Partes convienen lo siguiente:

1. Objetivo General

Este proyecto busca investigar el uso y significado cultural del Siagua (*cacao*, o *Theobroma cacao*), y si el mismo puede considerarse una especie cultural clave entre tres comunidades Kunas de le Comarca Kuna Yala, Panamá.

2. DISPOSICIONES GENERALES

2.1. Definiciones

A menos que el contexto exija otra cosa, cuando se utilicen en este convenio, los siguientes términos tendrán los significados que se indican a continuación:

- a. “Convenio” significa el presente convenio celebrado entre la Fundación y el investigador;
- b. “Fecha de entrada en vigor” significa la fecha en que el presente convenio entra en vigor, el 7 de mayo de 2007;
- c. “Parte” significa la Fundación Dobbo Yala o el investigador, según el caso;
- d. “Estudio” significa describir brevemente el estudio “**El Cacao Como Una Especie Cultural Clave**” que llevará a cabo el Investigador como tesis para obtener su título de maestría de la Universidad de Carleton.

2.2. Relación de las Partes

Ninguna estipulación del presente Convenio podrá interpretarse en el sentido de que entre la Fundación o el investigador existe una relación de empleador y empleado o de mandatario y mandante.

2.3. Ley que rige el Convenio

Este Contrato, su significado e interpretación, y la relación que crea entre las Partes se regirán por la ley aplicable en Panamá.

2.4. Notificaciones

Cualquier notificación, solicitud o aprobación que deba o pueda cursarse o prestarse en virtud de este Convenio se hará por escrito a la siguiente dirección:

INSTITUCION PATROCINADORA: FUNDACION DOBBO YALA
Nuevo Reparto El Carmen, Urbanización Linares,
Casa 13-B.

INVESTIGADOR: Jeffrey Barnes
Apartado, Bella Vista, Edificio Centrum, #9-B,
Republica de Panamá.
Correo electrónico:
jbarnes3@connect.carleton.ca

2.5. Lugares donde se hará el Estudio

Si los Congresos y comunidades respetivas lo aceptan, este Estudio se llevará a cabo en algunas comunidades de la Comarca Kuna Yala del país de Panamá (*tentativamente: Mirya Ubigandup, Rio sidra, y Carti Sugdup*).

3. OBLIGACIONES DEL INVESTIGADOR

3.1. No Beneficio del investigador por Comisiones, Descuentos, etc.

La Fundación se compromete a ofrecer apoyo al Investigador en logística (contactos en los congresos y comunidades, movilización y hospedaje cuando sea posible). El Investigador no recibirá remuneración alguna por parte de la Fundación en concepto de investigación.

3.2. Confidencialidad

El investigador no revelará, durante la vigencia de este Convenio o dentro de los tres (3) años posteriores a su expiración, ninguna información confidencial o de propiedad de la Fundación, sin el previo consentimiento por escrito de este último.

3.3. Documentos preparados por el investigador

El Investigador entregará a la Fundación copias de todos los informes que el preparará para las comunidades colaboradoras en las cuales realizará los trabajos de campo. También entregará un informe final a la Fundación dentro de 1 año de la Fecha de entrada en vigor de este convenio. El Investigador entregará también copias de las publicaciones que resultasen del estudio tan pronto sean publicadas.

Dentro de todos los informes y publicaciones, el Investigador incluirá una sección de agradecimiento en la cual reconocerá específicamente el apoyo de la Fundación. Adicionalmente, cualquier empleo de la Fundación que contribuya significativamente al trabajo descrito en una de las publicaciones (salva la tesis) será co-autor de esta publicación. Para determinar cual es una “contribución significativa,” el investigador y la Fundación seguirán La Ley No. 15 sobre derechos de autor.

3.4. Actividades del investigador.

Las principales actividades del investigador serán las siguientes:

- a. Revisión de la literatura sobre cultivos de importancia cultural en la región del Estudio (aspectos socio-culturales),
- b. Preparación de convenios de investigación con cada comunidad colaboradora,
- c. Entrevistas y administración de cuestionarías a comuneros y autoridades locales,
- d. Donde se permite, ciertas entrevistas con mayores serian gravadas para mejorar el entendimiento del testimonio, y preservar sus palabras en su forma original
- e. Observación participativa en el campo y la comunidad,
- f. Preparación de informes para comunidades colaboradoras, un informe final, y la publicación de los resultados del proyecto

3.5. Obligaciones del investigador.

Las principales obligaciones del investigador serán las siguientes:

- a. El Investigador se compromete al cogido de ético de la Sociedad Internacional De Etnobiología en todo su trabajo con las comunidades colaboradoras (http://ise.arts.ubc.ca/documents/ISECodeofEthicsTEXT2006_000.pdf)
- b. El investigador obtendrá los permisos correspondientes que son requisitos solicitados por la ley Panameña antes de comenzar cualquier trabajo de campo.
- c. Entregar informes y publicaciones a la Fundación dentro de las Fechas previstas en Sección 3.3 de este Convenio.

d. Informar el Fundación sobre el estado del proyecto regularmente.

4. Obligaciones de la Fundación:

- a. Prestar apoyo logístico a el investigador en sus actividades en el Comarca Kuna Yala (contactos, transporte, hospedaje cuando posible).
- b. Comunicar al investigador noticias e informes pertinentes al Estudio (cambios políticos en las comunidades en que trabaja el investigador, obstáculos u oportunidades logísticos).
- c. Ofrecer asesoría y asistencia al investigador.
- d. Ofrecer la utilización de la Biblioteca de la Fundación.
- e. Reconocer el trabajo del investigador en trabajos futuros que están basado en el trabajo hecho por el investigador.

5. Duración de la Investigación y del convenio:

El Convenio de investigación entre el Investigador y la Fundación tendrá duración de un año y medio, el cual iniciará su vigencia a partir de la firma del mismo. Este convenio podrá ser renovado con el consentimiento de ambas partes.

EN FE DE LO CUAL las Partes han dispuesto firmar este Convenio de Investigación en sus respectivos nombres en la fecha de 30 Mayo de 2007.

Signed

Jeffrey Barnes
Por el investigador
Dobbo Yala

Signed

Eligio Alvarado Paredes,
Director Ejecutivo Fundación

Appendix 4 - Respondent/ Recording Identification Chart

Audio CD No. 1

Orlando Panis Morales
Junio 2007

Audio CD No. 2

Osvaldo Ben Montesur
Junio 2007

Audio CD No. 3

Ubaldo Perez
Junio 2007

Wardat Martinez
Junio 2007

Siaguaru Perez
Junio 2007

Criselda Arias
Junio 2007

Audio CD No. 4

Samuel Gonzales
Junio 2007

Audio CD No. 5

Foto Sate

Patricio Monteser
Junio 2007

Audio CD No. 6

Alberto Lopez
Junio 2007

Audio CD No. 7

Foto Sate

Raphael Aries
Agosto 2007

Amma Bip Williana
Agosto 2007

Siabibi Gonzalez
Agosto 2007

Placidio Perez Aigilar
Agosto 2007

Kandur Ercaldo Morales
Agosto 2007

Audio CD No. 1

Audio CD No. 2

Audio CD No. 3

Sailah Roy Rogers
Agosto 2007

Audio CD No. 4

Denisia Lopez
Agosto 2007

Audio CD No. 5

Freddy Perez
Agosto 2007

Audio CD No. 6

Ruben Tejada
Agosto 2007

Audio CD No. 7

Foto Sate

Foto Sate

Efrain Melo
Agosto 2007

Marianella Lopez
Agosto 2007

Abina Lopez Morris
Agosto 2007

Inaouler Bonilla
Agosto 2007

Alexis Bonilla
Agosto 2007

Siabibi Lopez
Agosto 2007

Audio CD No. 1

Audio CD No. 2

Audio CD No. 3

Audio CD No. 4

Audio CD No. 5

Foto Sate

Siaguaru Perez
Agosto 2007

Buna Auristales Hernandez
Agosto 2007

Pablo Hurtado
Agosto 2007

Miguel Presiado Lopez
Agosto 2007

Audio CD No. 6

Audio CD No. 7

Audio CD No. 8

Appendix 5 – Sia Nele Story: The Origin of Siagua

Interpreted by Domingo Diaz (*Dulegaya*-Spanish) and Jeffrey Barnes (Spanish-English)

**Origen de Ciagua,
Por Tejada de la isla de Miria Ubgigandup, Kuna Yala
Origen of Siagua
By Ruben Tejada, from the island of Myria Ubgigandup, Kuna Yala**

Vino a esta tierra *Cia* ⁽¹⁾ igual que las otras criaturas de la creación de Dios.

Sia arrived on this Earth in the same way as God's other creatures.

- Nadie vino a este tierra solo, todas las cosas han sido creados en dualidad y con similitud.

No one comes to this earth in isolation; all things are created in a duality, with a mirror image of each other.

- Por tanto *Ciagua* ⁽²⁾ tiene sus semejantes- parientes y es heterogéneo

Siagua thus has its inner circle which embraces all, while recognizing the differences which exist among each other.

- Entonces, vino *Dad Ibe* ⁽³⁾ a la tierra, y vio que *Boniganmar Kachigan* ⁽⁴⁾ como se encuentra diseminado en la tierra lo que ser supremo a creado.

When Tadibe came to Earth, he saw how malignant spirits had spread over the Earth that the Supreme Power had created.

- Al ver tal situación Dad Ibe, se sintió débil y preguntó a si mismo, ¿habrá en esta tierra otra persona más hábil, con más poderes, (con más *burba*) ⁽⁵⁾ que yo?, sí de ser así, seguramente me vencerá y seré derrotado por esta persona, si no me preparo.

Facing this, Tadibe felt threatened and asked himself, "on this Earth, could there exist a stronger, more able, being, one with more powers, than I? And if that being were to indeed exist, it will no doubt vanquish me and I will be destroyed if I do not prepare myself.

- Dad Ibe para no ser derrotado o ser vencido por los *boniganmar* ⁽⁶⁾, pensó y dijo: tengo que fortalecerse para enfrentar boniganmar (enemigos), sino seré devorado, exterminado fácilmente por los boniganmar. Entonces decidió a preparase.

Tadibe decided that in order to not be overtaken by the dangerous spirits, he would have to make himself stronger to prepare for the confrontation, lest he be devoured and exterminated.

- Entonces, Dad Ibe envió alguien a la primera capa de la tierra llamada, *Kalu Baquia Bil-li* ⁽⁷⁾ para acechar las fortalezas de

boniganmar, en este nivel de tierra el comisionado visitó a *Kilu Kueduli* ⁽⁸⁾ e inspeccionó el área y regreso nuevamente a la superficie de la tierra.

Tadibe commissioned *Kalu Baquia Bil-li* to the first stratum below the Earth to reconnoiter and assess the stronghold of the dangerous spirits. It was at that first stratum below the Earth that the commissioned one visited with *Kilu Kueduli* and reviewed the situation before returning to the Earth's surface.

- Luego Dad Ibe envió al comisionado a su regreso hacia al norte. En el norte encontró al *Kilu Dibarridola* ⁽⁹⁾ y dialogó brevemente con él y el comisionado regreso nuevamente a la superficie de la tierra.

Tadibe then sent his commissioned one to the North where he met with *Kilu Dibarridola*, and spoke with him briefly before returning again to the Earth's surface

- A su regreso el comisionado, Dad Ibe le designo otro viaje esta vez fue para el nacimiento del río y ahí encontró al guardián del río al *Kilu Dibarridola*, conversó brevemente con él y nuevamente regresó al la superficie de la tierra el comisionado.

Upon his return, the commissioned one was sent on yet another voyage, but this time to the river's source. That is where the commissioned one encountered the Guardian of the river, and spoke with him, again just briefly, before returning to the Earth's surface.

- Dab Ibe, después de estos viajes pidió al comisionado que le informara todo lo que había presenciado durante su viaje y así lo hizo saber el comisionado a Dab Ibe.

Following these voyages, Tadibe asked the commissioned one to recount all that he had witnessed, and so the commissioned one informed Tadibe of what had happened.

- Luego, Dad Ibe envió otro de sus parientes. Para cerciorar lo que el primer enviado le vino a decir lo que presencié por estos lugares.

Later, Tadibe sent another from his inner circle to confirm what the commissioned one had reported to have witnessed in those places.

- Cuando el segundo enviado fue para la primera capa de la tierra no pudo llegar para esta capa, sino fue a la morado de los Boniganmar lugar llamado *Kalu Doika Bil-li* ⁽¹⁰⁾ y es este estrato es la morada de Kilu kueduli y Kilu kueduli lo apresó a él y no pudo regresar a la superficie de la tierra, *Kunas Nega* ⁽¹¹⁾.

When the second one commissioned by Tadibe attempted to enter the first stratum below the earth, he was not able to reach it. He could not go beyond the area known as the *Kalu Doika Bil-li*. At that level he was sequestered by the *Kilu Kueduli* and could not return to the Earth's surface.

- Dad Ibe al ver que no regresaba el enviado, cuestionó, ¿donde se ha ido este individuo? se ha perdido y el otro enviado cada vez cuando lo enviaba regresa. ¿Que le habrá pasado a este ahora?

Seeing that the second one which he had commissioned was not returning, Tadibe wondered “where has this person gone? He is lost, whereas the first one always returned. What could have happened to this one?”

- Entonces vivía una adolescente llamada Cia y ella era una de las mejores *Nelegua*.⁽¹²⁾ Dad Ibe acudió a la ayuda de ella para liberar al pariente secuestro por los Boniganmar.

Tadibe therefore sought the help of a young girl named *Sia*, who was one of the best *Nelegua*, hoping that she could help to free the one imprisoned by the Boniganmar.

- Como *Nelegua* conocía muy bien los estratos o lugares *Bil-ligan Boniganmar*⁽¹³⁾ por tanto sabía a donde dirigirse y ha donde estaba su pariente secuestrado por los Boniganmar y allá mismo se dirigió y lo rescató a su pariente secuestrado y le traje a Neg Kunas.

As a *Nelegua*, *Sia* knew the earth’s strata well, and so she knew where to go and where to find the one who had been imprisoned by the Boniganmar, and she was able to rescue him.

- Cuando *Nelegua* lo trajo liberado al pariente a donde Dad Ibe , entonces Dad Ibe veneró a ella y le dijo: Veo que en verdad tienes muchos poderes porque pudiste liberar al pariente de las garras del enemigo. Es así se originó y se transformó *Ciagua* con poderes curativos.

When *Sia* brought him back to Tadibe. Tadibe worshipped her and said “I see that you have great power because you were able to liberate him from the claws of the enemy. And this is how *Siagua*’s curative powers originated.

- Entonces el Creador le dijo a *Ciagua*: De hoy adelante su misión espiritual por siempre será de rescatar y proteger las almas o espíritus de mis hijos *Olo Dule*⁽¹⁴⁾

And so the Creator said to *Siagua*, “from now on, your spiritual mission will be to reinstate and protect the souls and spirits of my children, *Olo Dule*.

- Después el Creador le dijo: Nadie vive aislado ni trabaja solo, todas las cosas se accionan y se ejercen recíprocamente entre dos o más agentes o fuerzas, por tanto te lo designaré una persona para su trabajo.

The Creator then said to *Siagua*, “Nobody lives in isolation or works alone. All forces work in reciprocity. For this reason, I have designated a companion for your work.”

- Entonces el Creador a Ciagua le designo a *Napa*⁽¹⁵⁾ (la tierra) como compañera de trabajo. Venimos de tierra de otra elemento no sino de tierra.

And so this is how the Creator designated *Napa* (Earth) to *Siagua*, as a work partner. We came from no other than earth.

- Por tanto a esta tierra se le llamó *Cianar*⁽¹⁶⁾

This earth would be called *sianar* (cacao brazier)

- Estos dos elementos (*Cianar* y *Ciagua*), son los que tienen mucho burba (poder y energía espiritual).

The two elements known as *Siagua* and *Sianar* are those who have much spiritual strength and power.

- El Creador le dijo a ellos: ahora ustedes (*Ciagua-Napa*) medirán su fuerzas y verán quien entre los dos es más fuerte.

The Creator said to them: “now you two will measure your powers and see which one is stronger.”

- *Ciagua* brotó de la tierra, entonces *Ciagua* es criatura de la Madre tierra

Siagua germinated from the Earth, therefore *Siagua* is a creature of Mother-Earth

- Como *Cianar* esta hecho de *Napa*-barro no se puede ser destruido por el fuego

Since *Sianar* is made of earth, it cannot be destroyed by fire.

- Y los mágicos granos de *Ciagua* se queman en *Cianar* cuyo humo se esparce en nuestro entorno para proteger de nosotros de los Boniganmar. Entonces los dos son parejos en fuerzas. Pareciera *Ciagua* al quemarse se convierte solo en ceniza, es al contrario su humo se convierte en fuerzas misteriosas increíbles.

And the magical seeds of *Siagua* are burnt by *Sianar*, whose smoke engulfs our souls to protect us from malignant spirits. Thus the two are paired in their power. Although it would seem that when *Siagua* is burnt it simply becomes ashes, to the contrary, that smoke takes on a mysterious, indescribable force of its own.

- El creador, como es todopoderoso sabía como vendría las cosas en el futuro.

The Creator knew what would happen in the future since he is all-powerful.

- A Ciagua podemos comparar como el teléfono-celular. Este aparato manda y recibe los mensajes cerca y de muy lejos. Es muy increíble el invento del hombre. Así mismo actúa Ciagua. Es la creación de nuestro creador.

We can compare *Siagua* to a cellular telephone. This little apparatus sends and receives messages from near and far. The ingenuity of Man is impressive. *Siagua* acts in the same way. It is the product of our Creator.

- *Ciaduled Igar*⁽¹⁷⁾ conocedor de las leyes secretas de Ciagua orienta e informo a Ciagua (trasmitirle el mensaje) sobre lo que padece un Kuna y Ciagua al recibir el mensaje de *Ciaduled Igar* actúa y cumple su misión de ir a rescatar el espíritu raptado del KCuna por Boniganmar, es dando cerca o bien lejos, mejor dicho hasta a los estratos más profundos de las capas de la tierra.

The *Ciaduled Igar*, who knows the secret laws of *Siagua*, guides and communicates with *Siagua* regarding that which ails a Kuna. Upon receipt of the message from *Ciaduled Igar*, *Siagua* achieves its mission reinstating the Kuna's captured soul, be it near or far, or, better said, regardless of the depth through Earth's strata it must travel.

- *Ciaduled Igar*¹⁵ personalmente no val en busca del alma perdido de un Kuna sino el espíritu de Ciagua cumplirá su papel de ir a rescatar el alma perdido. En caso del teléfono-celular igualmente ocurre. No nos hace falta ir personalmente a la persona que deseamos comunicarle o transmitirle el mensaje, usamos el teléfono-celular para la conferencia es dándonos en un lugar sin moverse e igualmente púes ocurre con Ciagua.

The *Ciaduled Igar*, the One who has Knowledge, does not search for lost souls himself, but sends the spirit of *Siagua* to do so. In the case of a cellular telephone the same happens. When we would like to communicate with someone without moving, we needn't be face-to-face, so we use a cellular telephone.

- Dad Ibe era Kandur⁽¹⁸⁾ entonces, él escogió a Cianar y Ciagua conociendo sus poderes para su protección contra Boniganmar. Por eso vemos que cuando comienza el rito de la chicha brava lo primero que le acompañan al Kandur es Cianar junto con Ciagua, para su protección.

Tadibe was the master of ceremony of a coming of age celebration called the *inna suet*, and chose *Sianar* and *Siagua*, since he knew their protective powers against the *Boniganmar*. For this reason when an *inna suet* takes place, *Siagua* and *Sianar* are the first to accompany the Kandur, for his protection.

¹⁵ El cantante de la historia, en este contexto una profesión muy especial, que le permite de contar la historia. The singer of the story possesses, in this context, a very special profession that enables him to tell the story.

- Donde se encuentra un enfermo siempre estará presente Ciarar y Ciagua son dos elementos inseparables y con enormes poderes curativos y estará presente en todos niveles de las dificultades que se encuentra los Kunas

Where someone is sick, always present will be *Siagua* and *Sianar* – two inseparable elements with enormous powers that will be present at all levels of the difficulties that can be found among the Kuna.

- Hoy día algunas personas han reemplazados a Ciarar por unos pedazos del material de aluminio y por un pedazo de la paila de hierro, estos no fueron nombre para este propósito por tanto su vigor no es como Ciarar.

Nowadays some people have replaced the *sianar* with some metal pots and pans. These implements were not designated for this purpose, and do not have the same vigor as *sianar*.

- Además Ciagua se puede comparar como el cerebro humano. La capacidad del cerebro humano es increíble y misterioso así mismo es Ciagua aunque uno ve que los granos de Ciagua muy pequeños pero su poder es increíblemente infinito.

What's more, *Siagua* can be compared to the human mind. The capacity of the human mind is without limit and beyond comprehension, in the same way that the seeds of *Siagua* appear small, but have infinite power.

Palabras claves — key words

- (1) *Cia*: El nombre de la joven Nele, Cia nele – Name of the young cacao doctor
- (2) *Ciagua*: Cacao, el nombre de la joven Nele, Cia nele – Cacao, name of the young cacao doctor
- (3) *Dad Ibe*: Personaje mitológico que vino al mundo superdotado entre los Kunas quien Dios lo mando para guiar , orientar y pacificar al mundo Kuna, en el tiempo de Piler
- (4) *Boniganmar Kachigan*: Espíritus malignos -Malignant spirits
- (5) *Burba*: Espíritu, fuerza, poder, cultura – Spirit, force, power, culture
- (6) *Boniganmar*: Espíritus malignos – Malignant spirits
- (7) *Kalu Baquia Bil-li*: Primero enviado por Dadibe – The first person sent by Dadibe

- (8) *Kilu Kueduli*: Persona con quien habló Kalu Baquia Bil-li – The person with whom Kalu Baquia Bil-li spoke.
- (9) *Kilu Dibarridor*: El rey de agua ó guardián de la fuente de agua ó donde emana el agua – The King of water or the guardian of the water's source
- (10) *Kalu Doika Bil-li*: Fortificacion ó capa donde mora Baquia uno de los enemigos de Dad Ibe – The fortress where Baquia, one of Tadibe's enemies, is found
- (11) *Kunas Nega*: Casa de los Kuna – The house of the Kuna
- (12) *Nelegua*: Alguien con poderes curativos – Someone with curing powers
- (13) *Bil-ligan Boniganmar*: N/D - N/A
- (14) *Olo Dule*: La gente de oro – The 'golden' Kuna
- (15) *Napa*: tierra, o arcilla rojo – Earth or red clay
- (16) *Cianar*: Quemador hecho de arcilla rojo – Braizer made from red clay
- (17) *Cia dulet Igar*: conocedor de las leyes secretas de Ciagua; Conocimientos profundos de los poderes de Ciagua – A knower of the legends and secrets of Siagua. Deep knowledge of Siagua's powers
- (18) *Kandur*: Dirigente principal de la ceremonia *inna suet* (chicha brava) – The master of ceremonias at the *inna suet*