Ethnobotany Workshop
3rd International Conference on Language Documentation and Conservation

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Ethnobotany Workshop

• Break out groups
• Ethnobotany and language
• Break
• Tools: plant collection & vouchers
• Tools: recording Traditional Ecological Knowledge
• Discussion
In what ways can/should ethnobotanists and linguists work together?

In your experience...?

What would be useful for you to know about ethnobotany?
Ethnobiology

The interdisciplinary study of relationships between human cultures and their biological worlds

Uses
Perceptions
Classification
Knowledge
Resource management practices & implications
Traditional* Ecological Knowledge

• “a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationships of living beings (including humans) with one another and with their environments” (Berkes 2008)
Levels of analysis of TEK

World view

Social Institutions

Land and Resource Management Systems

Local knowledge of land, plants, animals

Adapted from Berkes 2008
Where is TEK encoded?

- Observations
- **Names**
- Stories
- Chants, songs
- Proverbs, sayings
- Riddles, jokes
- Procedural text
- Behavior/management
- Other art forms
Most of the world’s remaining biodiversity is found in landscapes occupied by indigenous peoples.
One of the keys to understanding cultural "footprints" is TEK ...encoded in language
Does losing the name of a plant species = loss in biodiversity?
Interspecific relationships encoded in O'odham names

<table>
<thead>
<tr>
<th>O'odham name</th>
<th>Translation</th>
<th>Species</th>
<th>Notes</th>
<th>Reference</th>
<th>Plant/animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kakaicu e'es</td>
<td>quail's plant</td>
<td><em>Heliotropium curassavicum</em></td>
<td>possible forage</td>
<td>Nabhan et al. (1989), Rea (1983)</td>
<td>p</td>
</tr>
<tr>
<td>Kuidad</td>
<td>mesquite knocker</td>
<td><em>Colaptes auratus</em></td>
<td>frequent nesting habitat</td>
<td>Rea (1983)</td>
<td>a</td>
</tr>
<tr>
<td>Kuigam</td>
<td>mesquite owner</td>
<td><em>Phainopepla nitens</em></td>
<td>bird whose tree is host to parasitic mistletoe that is eaten and dispersed</td>
<td>Nabhan et al. (1989), Rea (1983)</td>
<td>a</td>
</tr>
<tr>
<td>Makkom ha-jewed, makkom je:j</td>
<td>sphinx moth’s ground (or its other)</td>
<td><em>Boerhaavia erecta</em>, <em>Boerhaavia intermedia</em></td>
<td>larval host plant</td>
<td>Nabhan (1997); Rea (1997)</td>
<td>p</td>
</tr>
<tr>
<td>S-baban makam</td>
<td>coyote’s eatings</td>
<td><em>Calamospiza melanocorys</em></td>
<td>possible predator–prey relationship</td>
<td>Rea (1983)</td>
<td>a</td>
</tr>
<tr>
<td>Vakoin ha:k</td>
<td>heron eagle</td>
<td><em>Pandion haliaetus</em></td>
<td>predator with parallel foraging strategies</td>
<td>Rea (1983)</td>
<td>a</td>
</tr>
<tr>
<td>Vipismal je:j</td>
<td>hummingbird’s mother</td>
<td><em>Justicia californica</em></td>
<td>nectar source</td>
<td>Rea (1983)</td>
<td>p</td>
</tr>
</tbody>
</table>

Note: In the last column, p = plant; a = animal.

Nabhan (2000)
TEK and resilience

• Detailed understanding of weather patterns, indicators of weather and how they are changing

• Long-term understanding/observations of ecological cycles and processes and how they are changing

• Management practices that included both ecological and social mechanisms to allow for resilience to: cyclones, volcanoes, tsunamis, drought, etc.
“When the wiliwili flowers, the sharks bite”
Octopus and Breadfruit

• May 2012 (Pakin Atoll, Pohnpei State, FSM): Mr. Nicklaus Marco explains in Mortlockese the tandem growth of kúús ‘octopus’ and máái ‘breadfruit’ in the context of manaman ‘spiritual and supernatural power’
| Nganei, manamanen sokkon kké, áá? | Look, the spiritual power of things like this, huh? |
| Manaman. | It has spiritual power. |
| Manaman pwe, nganei máái? | It has spiritual power because, look at the breadfruit? |
| E sóótou, ie fafkaún. | It falls down, and it’s this size. |
| Kúús núúsha sokkon fafkaún ie. | There are plenty of octopus of this size. |
| Kúús, aa ioor leeset. | Octopus, there are in the ocean. |
| Raa féfféúshaala máái, | The breadfruit would get bigger, |
| pwal féfféúshaala kúús. | the octopus, too, would get bigger. |
| Aa núshaala. | They increase in number. |
| Iaa, “Pwata e féérátá táái… | I would say, “Why would this happen.. |
| eké féérítá sokkon ie?” | why did something like this happen?” |
| Mé manaman, áá? | It’s from the spiritual power, huh? |
| Féérían eie mé lááng, | This is something created by the heavens, |
| fééréei sokkon kké. | to make something like this. |
| Pwai mwaar. | I, too, am amazed. |
Where is TEK encoded?

Part of it is behavior/management...how people do things
Understanding TEK

- Unique approaches to surviving in, and understanding the ‘natural’ world, how it functions, and the place of humans within it
- Models for “keeping it living”
- Detailed and long-term knowledge of ecological processes and interactions
- Models and lessons: adaptation and resilience
- Knowledge of useful species
Tools

1. Documenting which plants people are talking about

2. Documenting TEK
Which plant is it?

Kingdom

Subkingdom

Phylum

Class

Subclass

Order

Family

Genus

Species

Sub species

Variety
Which plant is it?

Class  Equisetopsida
Subclass  Magnoliidae
Superorder  Lilianae
Order  Alismatales
Family  Araceae
Genus  Colocasia
Species  *Colocasia esculenta*
Subspecies
Variety
Which plant is it?
(why we need to collect plant vouchers)

Local name ≈ multiple scientific species

Local name ≈ subspecies or varieties not described with scientific names

Local name varies across locations (villages, regions, islands etc)

Local name changes over time or is lost

Local name applied to introduced species

Scientific name changes over time
Collecting plant vouchers/herbarium specimens

Lots of good websites with all the info:

Examples:

- herbarium.usu.edu
- msuextension.org/publications/AgandNaturalResources/MT198359AG.pdf
- http://www.flmnh.ufl.edu/herbarium/voucher.htm#Pressing
Making a plant voucher

Label
Scientific name
Local name
[Uses (with permission)]
Date
Collection No.
Location
Habitat
Plant description
Collector’s name
Collecting party
Notes
Issues to consider

- Permission to record information
- Permission to collect
- Permission to export

Collaboration with local herbaria

Index of international herbaria

sciweb.nybg.org/science2/IndexHerbariorum.asp
Digital Herbaria

- Example from Pacific Islands

Tools

1. Documenting which plants people are talking about

2. Documenting TEK
Recording TEK in discourse

• Describing the use, function, purpose, etc. of something is a fundamental tool for teaching TEK
• Mini-narratives, anecdotes, asides, jokes, etc. contextualize TEK to underscore the socio-cultural significance to listener
• What is the purpose of any given stretch of narrative or description?
Turmeric

• June 2010 (Pakin Atoll, Pohnpei State, FSM): Mrs. Anastasia Maipi explains in Mortlockese the cultural value of *kúshel* ‘turmeric (*Curcuma longa*)’
• Elicitation through an illustrated brochure of local Pohnpeian plants
• Asked to explain distinctions between plants found on Pohnpei and Pakin, as well as different cultural uses between Pohnpeians and Mortlockese
<table>
<thead>
<tr>
<th>Original Text</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oo, iwe,</strong></td>
<td><strong>Oh, well,</strong></td>
</tr>
<tr>
<td><strong>eic re kai úra– re Fónpei re úró ‘kisiniorgan’</strong></td>
<td><strong>as for this they say– Pohnpeians say ‘kisiniorgan’</strong></td>
</tr>
<tr>
<td><strong>Ngé re Mwoshulók re úró ‘kúshel’</strong></td>
<td><strong>But Mortlockese say ‘kúshel’</strong></td>
</tr>
<tr>
<td><em>(Kúshel.)</em></td>
<td><em>(Turmeric.)</em></td>
</tr>
<tr>
<td><strong>Mm.</strong></td>
<td><strong>Right.</strong></td>
</tr>
<tr>
<td><strong>Kúshel, raa iáia reen lée, reen shalúfún arames.</strong></td>
<td><strong>Turmeric, they use with coconut oil as a lotion.</strong></td>
</tr>
<tr>
<td><strong>Re kan shalúf:</strong></td>
<td><strong>They would use it as a lotion:</strong></td>
</tr>
<tr>
<td><strong>pweikaritou sho, amaata nganei kúshel,</strong></td>
<td><strong>grate some copra, grate it with turmeric,</strong></td>
</tr>
<tr>
<td><strong>raa iungutei, shalúf iak.</strong></td>
<td><strong>they squeeze it, then use it as a lotion.</strong></td>
</tr>
<tr>
<td><strong>Ee, loomw,</strong></td>
<td><strong>Uh, before,</strong></td>
</tr>
<tr>
<td><strong>imi kan itei mwongo– ee mi ioor eeu kón?</strong></td>
<td><strong>I would eat– uh, there’s a kind of breadfruit pudding?</strong></td>
</tr>
<tr>
<td><em>(E e?)</em></td>
<td><em>(Really?)</em></td>
</tr>
<tr>
<td><strong>Iir mi– amaata nganei kúshel llan shoo we,</strong></td>
<td><strong>They would– grate it with turmeric in the copra,</strong></td>
</tr>
<tr>
<td><strong>raa iungutei,</strong></td>
<td><strong>they squeeze it,</strong></td>
</tr>
<tr>
<td><strong>mi kai, men nganei llan kón we.</strong></td>
<td><strong>it would, go in the pudding.</strong></td>
</tr>
<tr>
<td><strong>Upé nanganei llan arúngún kón we,</strong></td>
<td><strong>You would look at the coconut cream of the pudding,</strong></td>
</tr>
<tr>
<td><strong>utáán ram.</strong></td>
<td><strong>it’s really yellow.</strong></td>
</tr>
<tr>
<td><em>(Ram.)</em></td>
<td><em>(Yellow.)</em></td>
</tr>
<tr>
<td><strong>Iwe, iei, isé k–</strong></td>
<td><strong>And so, now, I don’t know–</strong></td>
</tr>
<tr>
<td><strong>isái wérei no shóón iei raa iáia nganei aar kón.</strong></td>
<td><strong>I haven’t seen people now using it with their pudding.</strong></td>
</tr>
</tbody>
</table>
Llan- loomw, usun- llan sokkon-kón we re kan féérei?
Usun shak ngé re kan féérei pwe-ee, mi kan ioor kapsen sokkon fansóun
ta repé mwongo sokkon kón we.
Usun, aewan,
re Mwoshulók meet re kan úró, ‘naúfé’?
Aewan naúnaún.
(Aewan naúnaún.)
Re kan féérei sokkon kón mi kúshel,
iwe pwúpwpwúlú kewe,
mwomwmwongo fangan, e?
(Mm.)
Iwe ina ululen, re kan use.
Iwe iei usun ngé esé kan ffís no sokkon we.
Ngang isé weewe pwata e kan–
lir má remi weewe reen pwata repé féérei epé,
epé kúsh– arúng kúshel.

In- a long time ago, like- in the kind of-
breadfruit pudding they would make?
It’s as if they would make it because–
uh, there would be talk of a type of time
when they will eat that type of pudding.
It’s like, firstly,
Mortlockese people would say, ‘naúfé’?
The first-born child.
(The first-born child.)
They would make the pudding with turmeric,
then the married couple,
they would eat together, right?
(Yeah.)
And so that’s the way it is, they would use it.
But now it’s as if that does not happen anymore.
As for me I don’t understand why they would–
They are the ones who understand why they’d make it,
to be- coconut cream with turmeric.
Analyzing TEK in discourse

• Once recorded, TEK in discourse can be analyzed using the tools of discourse analysis and interactional sociolinguistics.
• TEK—like other systems of knowledge, practices, and beliefs—are learned through socialization.
• Language provides the mechanisms for that socialization and intergenerational transmission.
Example of DA in action

Epistemological stance taken via discourse marker *nganei* ‘look at it’

(1)

a. **Nganei**, manamanen sokkon kké, áá?
   look-3SG.OBJ spiritual.power type these huh
   ‘Look, see the spiritual power of things like this, huh?’
   (referring to the observation that *kúús* ‘octopus’ and *mááí* ‘breadfruit’ grow larger in tandem in a specific season)

b. Manaman.
   spiritual.power
   ‘It has spiritual power.’

c. **Manaman** pwe, **nganei** mááí?
   spiritual.power because look-3SG.OBJ breadfruit
   ‘It has spiritual power because, do you see the breadfruit?’
Implications for future

• When we document TEK, what *exactly* are we documenting?

• What do we do with this documentation of TEK?

• Children don’t learn TEK through lists, they learn through interaction with their community and environment: What kinds of TEK documentation projects help promote intergenerational transmission?
Collaboration with Ethnobotanists

- Ethnobiology societies worldwide:

TEK:

Berkes, F. 2012 Sacred Ecology: Traditional Ecological Knowledge and Resource Management