

A discourse-based approach to the language documentation of local ecological knowledge

Emerson Lopez Odango

Pacific Resources for Education and Learning

This paper proposes a discourse-based approach to the language documentation of local ecological knowledge (LEK). The knowledge, skills, beliefs, cultural world-views, and ideologies that shape the way a community interacts with its environment can be examined through the discourse in which LEK emerges. ‘Discourse-based’ refers to two components: (1) the discovery and collection of LEK and its contexts through methods informed by the ethnography of communication, and (2) the analysis of speech that encodes LEK in the framework of Interactional Sociolinguistics. This discourse-based approach not only addresses the general need to accumulate more instances of speech (about LEK, or otherwise) in a documentary corpus, but also provides an analysis of the communicative event, one that sheds light on the dynamic nature of the content of that speech in the particular sociocultural context of that speech community, embedded in discursive moments. Fundamental to this approach is the need for collaboration across disciplines. This paper explores the links that can be made among the fields of language documentation, ethnobiology, and sociolinguistics.

Taropwe ie e aweenenei ia usun iaash sipwé weewetei iaan arames kile are aweewen mé aitiitan masawan leeset, fanéú, mé fáán lááng—ie arames re kai úró ‘local ecological knowledge (LEK)’—ngé iaash weewetei mi alóngólóng óón iaan arames apworaus, are ‘discourse.’ Llan eeu mé eeu kinikinin shóón sóópw kewe, iaar túmwúnú meet masawan leeset, óón fanéú, are fáán lááng mi kan alóngólóng óón iaar kile, iaar féfféér, iaar lúúk, iaar weewe, o pwal iaar awennam, iwe ngé simi toonganei weewetei fishi iaan shóón sóópw kewe kile mé féfféér kare saa longeetei fishi are aúsaleng fishi nganei iaar kewe apworaus. Ei sokkon aweewe e alóngólóng óón ruwou kinikin: (1) eeu kinikin ewe re kai úró ‘the ethnography of communication’ (weewen, sipwé longeetei fishi meet mi ffish lúpwán arames raa kan kakkapas are apworaus fangan), ei mi ossen lómwót nganei iaash kaié nganei peekin LEK; o pwal (2) eeu kinikin ewe re kai úró ‘Interactional Sociolinguistics’ (weewen, eeu sokkon aweewe e alóngólóng óón iaash sipwé longeetei fishi ttishikin me íáián kapas llan iaan arames kewe apworaus, ei mi ossen lómwót nganei peekin LEK). Ekkei sokkon kaié aa kan alapaala iaash weewetei iaan arames apworaus (usun LEK pwal ekkewe apworaus mé likin LEK) o aa kan pwal alúkkapaala iaash aweewe unusalapan masowan iaan arames apworaus. Emi aushea iaash sipwé angaang fangan reen iaash sipwé toonganei weewetei ekké sokkon apworaus. Ei taropwe e aweewenei lekóshun ekkei kinikinin peekin kaié: language documentation, ethnobiology, mé sociolinguistics.

1. Introduction¹ The calls for the integration of ethnobiology and language documentation have been sounding throughout the literature on topics such as ethnobotany (Balick 2009), biology (Si 2011), ecology (Coelho 2005), and biocultural diversity (Maffi 2005). These calls acknowledge the value of cross-disciplinary collaboration; one of the most recent ones was put forth in the 3rd International Conference on Language Documentation and Conservation (ICLDC 3), with the theme of ‘Sharing Worlds of Knowledge.’ By highlighting “the interdisciplinary nature of language documentation and the need to share methods for documenting the many aspects of human knowledge that all language encodes,” the conference encouraged researchers from various disciplines to come together under the ideological and methodological umbrella of language documentation.² Researchers in the field of language documentation continue to lead in the development of theories, methodologies, and best practices for the documentation of “observable linguistic behavior and metalinguistic knowledge” (Himmelman 2006:10). Language documentation not only records and analyzes the way in which something is uttered, but it also documents the content of that utterance—content which can conceivably cover any aspect of human experience. And while linguists themselves cannot theorize and develop methodologies to analyze all of that content, they can certainly turn to others in the spirit of collaboration (Glenn 2009).

Linguists who engage in extensive fieldwork know well that the skills of any one person are unlikely to encompass the range needed to document, describe, and analyze the multiplicity of human knowledge encoded in the speech system of a given community. One would not expect linguists to be adequately trained to collect plant vouchers, examine kinship systems, or engage in cantometrics (i.e., the study of song measurements), just as one would not expect ethnobotanists, cultural anthropologists, or ethnomusicologists to be trained in linguistic theory and produce a descriptive grammar. Researchers often advocate cross-disciplinary collaboration as a means of addressing this compartmentalization of specialized skills. Collaborative approaches have great promise for many documentation projects, and they often lead to tangible products that are considered ‘better’ than what would have resulted

¹The Mortlockese discourse data I discuss in §4 are taken from a period directly after the completion of my Peace Corps service and before the start of my graduate studies at the University of Hawai‘i at Mānoa. Other ethnographic information is drawn upon fieldwork experiences funded by Island Research & Education Initiative, the University of Hawai‘i at Mānoa Arts & Sciences Student Research Award, and the Bilinski Research Award. I would like to thank Kenneth L. Rehg, Lyle Campbell, Andrea L. Berez-Kroeker, Christina Higgins, and an anonymous reviewer for comments on earlier versions of this manuscript. I thank Joakim “Jojo” Peter for his assistance with the translation of the abstract into Mortlockese—*kilissou, mwa*. Portions of the research in this paper were presented at the following venues: The Hawai‘i-Fiji Workshop and Training on Social-Ecological Resiliency to Climate Change (September 2012), the University of Hawai‘i Linguistics Department Tuesday Seminar (October 2012), and the 3rd International Conference on Language Documentation and Conservation (February–March 2013) (Odango 2013b). I thank the audiences of those presentations for their helpful comments and discussions. I am also grateful to the Pakin Atoll community for their unfailing assistance and to the individuals whose voices and perspectives led to the genesis of this paper: Mr. Pius Siten, Mrs. Yunis Siten, Mr. Diego Maipi, Mrs. Anastasia Maipi, and Mr. Nicklaus Marco; *kilissou shaapwūr āāmi mwonson reen iōōmi alillis, sangei loomw toorei iei*. All errors in this work are mine alone.

²Quoted from the ICLDC 3 home page: <http://nflrc.hawaii.edu/ICLDC/2013/>

if there were no cross-disciplinary collaboration.³ Such projects come with great logistical complexity and challenges (Widlok 2005), and as such may not necessarily be a viable option for the linguist already engaged in a documentary project, or planning to start a new one. Another option is to learn as much as one can about other fields of study outside of linguistics, and to incorporate those tools into one's project. This is not to promote a 'jack-of-all-trades' approach to language documentation; rather, it is a reminder that depth in a documentation project can be achieved through breadth in methods and frameworks that are relevant to the work at hand, however defined—not only by the linguist, but also by the speech community (Truong & Garcez 2012, Yamada 2007).

In my research on Mortlockese as spoken by the Pakin Atoll⁴ speech community in Pohnpei State,⁵ Federated States of Micronesia (FSM), I find value in exploring the intersection of ethnobiology, language, and culture in the context of language documentation (Odango 2013b). People like to talk about what they know, and on Pakin, people know much about their environment. Their talk is not structured like a page from a science textbook, but rather is embedded in narratives, debates, songs, riddles, descriptions, procedural explanations such as recipes, and so forth, often co-constructed among interlocutors rather than emerging from just one person. This perspective is noted elsewhere in the literature. For instance, Aung Si (2011:179) gives an example of an elderly consultant who—when asked to describe a certain type of landscape—provided a wealth of information that “was delivered in the form of a lively account of how he was attacked by a bear on that occasion several years ago.” Aung Si then reflects on that narrative:

Recording a story of this nature therefore serves the twin purposes of documenting not only naturalistic spoken language of a particular genre, but also important cultural and traditional knowledge encoded in the language. Such a recording captures vital information that cannot be obtained from, say, a list of medicinal plants or traditional foods—it captures the community's knowledge of very real ecological links between living organisms on the one hand, and between organisms and their natural environment on the other. (2011:179)

One does not need to be trained in ethnobiology to be able to appreciate the value of that branch of scientific inquiry in an elicitation session. Regarding the analysis of

³To take just one of a multitude of examples, Balick (2009:29) describes the value of working with linguists in the development of the *Ethnobotany of Pohnpei: Plants, people, & island culture* to verify orthographic representations, admitting that “[they], the botanical authors, have learned just how useful it would be to incorporate a linguistic component into [their] projects as they are being developed.”

⁴Hereafter, for brevity I use the name “Pakin” as shorthand for “Pakin Atoll.” Note that while the Pohnpeian versions of the atoll name are “Pakein” and “Pakihn,” I defer to using the Pakin community's preferred spelling of <Pakin>, as it appears, for example, in the articles of pledge and by-laws for the Pakin Community Association, Inc.

⁵Hereafter, I include the “State” component in the proper name when I refer to the administrative region; otherwise, my use of the proper name alone denotes the high island: “Pohnpei” denotes Pohnpei Island, whereas “Pohnpei State” denotes the administrative region consisting of Pohnpei Island and its satellite atolls: And, Kapingamarangi, Mwoakilloa (Mokil), Nukuoro, Oroluk (Ocheluk), Pakin, Pingelap, and Sapwuahfik (Ngatik).

the knowledge, skills, and beliefs the community maintains about its relationship to their natural environment, I find that the tools offered by Discourse Analysis—especially those of Interactional Sociolinguistics (IS) (Gumperz 1982, 1990)—allow me to explore the ways local ecological knowledge (LEK) is co-constructed and contextualized in everyday life for speakers of Mortlockese. If documentary linguists are charged with recording and analyzing “observable linguistic behavior, i.e., examples of how the people actually communicate with each other” (Himmelman 2006:7), then what better way to do so than to use the tools developed in discourse studies and sociolinguistics?

In this paper, I present an example of a discourse-based approach to the language documentation of LEK. By ‘discourse-based,’ I refer to two components: (1) the discovery and collection of LEK and its contexts through methods informed by the ethnography of communication (Hymes 1971, 1974, 1992); and (2) the analysis of the speech that encodes LEK through the tools of IS. This discourse-based approach not only addresses the general need to accumulate more instances of speech in a documentary corpus (Woodbury 2003:47), but also provides an analysis of that communicative event, one that sheds light on the dynamic nature of content of that speech in the particular sociocultural context of that speech community. Furthermore, the use of discourse analytic tools broadens the documentary linguist’s toolkit, one that is likely to be well-stocked with other tools from lexicography (Haviland 2006), orthography development (Seifart 2006), and ethnography (Franchetto 2006, Hill 2006), among many others.

In §2, I clarify my terminology so as to provide common ground for a potential audience containing both linguists and ethnobiologists. In §3, I provide background linguistic and ethnographic information for Pakin Lukunosh Mortlockese,⁶ as this is the speech system from which I draw examples to illustrate the application of this discourse-based approach, discussed at length in §4 with the analysis of a selected excerpt. I provide concluding remarks in §5.

2. Conceptual explications I briefly discuss the different components of the discourse-based language documentation of LEK I illustrate in this paper. My discussions here cannot possibly reach the depth needed to address the complexities of their interactions with each other.

2.1 Language documentation I take the broad perspective of language documentation as the “field of linguistic inquiry and practice in its own right which is primarily concerned with the compilation and preservation of linguistic primary data and interfaces between primary data and various types of analyses based on these data” (Himmelman 2006:1). The emphasis is no longer just the creation of ‘end-products’ such as reference grammars and dictionaries, but also the ongoing development of

⁶The exonym “Pakin Lukunosh Mortlockese” denotes the Pakin geolect of the Lukunosh dialect of Mortlockese. By ‘geolect,’ I refer to the speech system of a particular geographic location—in this case, the Lukunosh dialect of Mortlockese as it is spoken on Pakin (e.g., Hoffman’s (2006) study of Tamazight geolects in Morocco). See §3 for further discussion.

a “corpus of recordings of observable linguistic behavior and metalinguistic knowledge” (10). The traditional view that emphasizes ‘end-products’ promulgates a division between *description*—usually the creation of analytic modules like the grammar, the dictionary, and a set of texts—and *documentation*, which entails the process of ‘extracting’ the information needed to develop the descriptive end-products. Such a process includes asking for metalinguistic commentary and co-constructing accurate translations, but setting aside such linguistic output (i.e., the anecdotal asides and ‘small talk’) as epiphenomenal to the primary project goals (Woodbury 2003:39).

I follow the approach of authors such as Rehg (2007) and Rhodes et al. (2006) wherein documentation and description are inherently intertwined. Grammars and dictionaries, then, come to be seen as “part of the apparatus—the descriptive and explanatory material—that **annotates** the documentary corpus” (Woodbury 2003:42, bold in original). The scope of that corpus has been broadened greatly, such that whatever was considered to be epiphenomenal in the traditional view is now seen as primary data, especially metalinguistic knowledge. In Himmelman’s (2006:8) view, metalinguistic knowledge is not limited to just the overt realizations of a speaker’s “interpretations and systematizations for linguistic units and events,” such as responses to felicity judgment tests or discussions about a taboo word. It also entails paradigmatic information that emerges from the topic of a conversation, such as the production of a “cognitive map of the landscape” as realized through the recitation of “a genealogy or lengthy mythological narratives” (8). To this discussion of metalinguistic knowledge, I would like to add ‘extralinguistic knowledge’ in the sense that the linguistic material may be the primary target of the elicitation session, but non-linguistic topics will emerge as part of that interaction. For example, the linguist may have elicited the recitation of a genealogy because of expressed interest in the morphosyntactic and rhetorical structure of that speech genre, but the actual content of that genealogy is extralinguistic.⁷

Himmelman (2006:9) asserts that “documentation here means that the elicitation process itself is documented in its entirety, including the questions asked or the stimuli presented by the researcher as well as the reaction by the native speaker(s).” Perhaps for many documentary linguists, what is most relevant to the research goal is the propositional knowledge a consultant ‘possesses’ about her or his language, rather than the way such knowledge ‘emerges’ in the discourse between researcher and participant. The elicitation interview in linguistics, however, is not unlike the interview in other fields of social science (Ensink 2003), which has implications for IS methodology, as I explicate in §2.3.

2.2 Ethnobiology and local ecological knowledge ‘Ethnobiology’ broadly-defined “is the scientific study of dynamic relationships among people, biota, and environments,” a field which covers several branches of the physical and social sciences, including “archaeology, geography, systematics, population biology, ecology, mathematical biology, cultural anthropology, ethnography, pharmacology, nutrition, con-

⁷The degree to which the linguist is interested in analyzing the cultural, historical, and family knowledge encoded in that communicative event is, of course, completely up to that individual’s research goals.

servation, and sustainable development.”⁸ The term ‘ethnobiology’ is not to be confused with ‘ethnoscience,’ which is “the study of systems of knowledge developed by a given culture to classify the objects, activities, and events of its universe” (Hardesty 1977:291).⁹

Given the focus in ethnobiology on the discovery and analysis of the interaction of humans with the environment, I limit ‘LEK’ to the instantiations of the object of ethnobiological study, whereby LEK is the “cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and their environment” (Berkes 1999:8).¹⁰ Note that the phrase ‘ethnobiological knowledge’ can include LEK, but not exclusively, since knowledge of plant voucher collection methods, for example, is an instantiation of knowledge that belongs to ethnobiological study, but is not necessarily derived from the local knowledge of a specific speech community. Rather than use ‘ethnobiological knowledge’ and ‘LEK’ interchangeably (e.g., Si 2011:169), I use ‘LEK’ with a restricted denotation.¹¹

While ‘LEK’ is widely used (e.g., Charles 2001, Davis & Wagner 2003, Gilchrist et al. 2005, *inter alia*), the components of the term itself are contested for various reasons (Berkes 1999:3–8). What many researchers call ‘local ecological knowledge’ is also referred to as ‘traditional ecological knowledge’ (TEK). The ‘traditional’ component in that term, however, connotes that the knowledge has been passed down unchanged since time immemorial; such a perspective is at odds with the dynamic and evolving nature of this knowledge. The knowledge of different communities living in an area may not all be considered ‘traditional,’ especially if some groups arrived more recently than others (e.g., immigrant diasporas), or if some pieces of knowledge are idiosyncratic to the lived experiences of just one individual rather than being codified by the community at large. Some researchers thus find it important to differentiate between ‘indigenous knowledge’ and ‘local knowledge.’ The use of ‘local’ in lieu of ‘traditional’ can be perceived as more inclusive—any member of a place can develop knowledge about the environment, regardless of ‘degree of indigeneity’ or diasporic

⁸Quoted from the “What is Ethnobiology” webpage: <http://ethnobiology.org/about-ethnobiology/what-is-ethnobiology>. Note the lack of any mention of “linguistics” (Kenneth L. Rehg, pers. comm., 2013).

⁹Ethnoscience is generally associated with indigenous perspectives on taxonomical classification (Berlin et al. 1968, Simpson 1961, Sturtevant 1964, *inter alia*). There are many branches of scientific inquiry that take cultural interaction into account yet do not focus explicitly on components of the biosphere, such as ethnoastronomy and ethnomathematics; for that reason, neither “ethnobiology” nor “ethnoscience” suffice as labels that encompass all of the sciences that are “coupled with the prefix ‘ethno-’” (Sturtevant 1964:99).

¹⁰Berkes’s definition is actually in the context of “traditional ecological knowledge” (TEK), but for reasons I explicate in this section, I defer to the use of “local ecological knowledge” (LEK).

¹¹Even though LEK tends to be seen as the knowledge of the ‘studied’ speech community—one that is often non-industrial/urban, orality-based, and non-‘Western’—this is not necessarily so. Western science does, after all, produce ecological knowledge and develop methodologies for inquiry, all embedded in ideologies, which are passed down to children intergenerationally through cultural transmission via language and socialization in academic settings, and which attempt to explain interrelationships of living beings in the biosphere.

status.¹² I use ‘local’ in this paper with connotations that include temporal aspects: local knowledge associated with a place as developed by its residents, however long the time frame may be for the development, contextualization, and inter- and intra-generational transmission of such knowledge.

The ‘knowledge’ component of ‘LEK’ is a shorthand for ‘knowledge, practice, and belief,’ since LEK encompasses more than just the propositional and procedural knowledge about one’s relationship to the environment. Berkes’s model of the levels of analysis in traditional knowledge and management systems provides a conceptualization of how LEK ‘lives’ in the people who produce it (Figure 1).

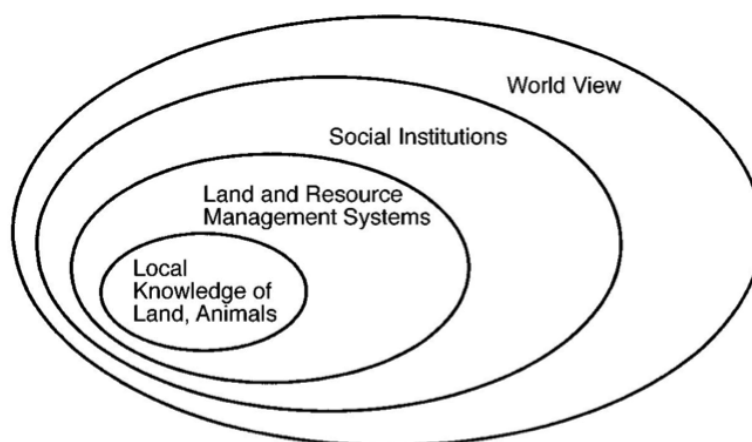


Figure 1. Levels of analysis in traditional knowledge and management systems (Berkes 1999:13)

From the perspective of documentary linguists, any of the four levels might readily be documented through lexical investigations, such as collecting the local names of a plant (Level 1) or collecting the terms for the practices, tools, and techniques used to cultivate that plant (Level 2). Investigations and analyses of the third and fourth levels must rely on more than just the lexicographic toolkit, and they might venture into fields of sociolinguistics and linguistic anthropology. While many ethnobiologists tend to focus on the collection of LEK in the two inner-most ellipses, not all explore the connections in the two outer-most ellipses (Ticktin 2013).¹³

Because LEK is “both cumulative and dynamic, building on experience and adapting to changes” (Berkes 1999:8), I connect these discussions to “the concept of emergence in linguistic anthropology and interactional linguistics” (Bucholtz & Hall 2005: 587). While it is possible to investigate the kinds of knowledge a community member ‘possesses’ and have her or him ‘reproduce’ such knowledge in a formal assessment, there are many other examples of LEK that emerge through everyday dialogic pro-

¹²The emphasis on ‘local’ can be perceived as a focus on the geographic boundaries of the knowledge, with a loss on the emphasis on the temporal aspects of intergenerationally acquired knowledge (Kirsten Helgeson, pers. comm., 2014; Helgeson’s work is supported by the National Science Foundation Graduate Research Fellowship under Grant No. DGE-1329626).

¹³The same might be said of documentary linguists whose research interests focus on, for example, lexicography and typology, rather than sociolinguistics, ethnography, cultural anthropology, and ethnohistory.

cesses; as such, LEK investigations can be framed in the linguistic anthropological perspectives of dialogism (Bakhtin 1981, Mannheim & Tedlock 1995) and performance (Hymes 1975). For any communicative event related to LEK—be it the banter amongst hunters of wild pigs or the elicitation session between the researcher and interviewee—the sociolinguist in particular might be interested in *how* those LEK worldviews emerge through performance.¹⁴

2.3 Discourse-based discovery and analysis Language documentation projects often use ‘discourse’—in the broad sense of “actual instances of communicative action in the medium of language” (Johnstone 2008:2)¹⁵—as a guiding factor in the sampling of communicative events (Seifart 2008). The discovery of speech events for documentation can be motivated by either convenience sampling (i.e., no conscious procedure to select recordings, since all data would contribute to the growth of a corpus) or externally motivated sampling (i.e., selecting recordings that reflect the requirements of the users of a language documentation project) (65). Systematic sampling—referring to “the inclusion of sufficient examples of each recurring type in the data” (64)—motivates the identification of different types of communicative events in order to represent them as fully as possible in a documentary corpus.

One approach is to employ the ethnography of communication (Hymes 1971, 1974, 1992), in which several parameters are used to describe a single communicative event. The classic set is represented in the SPEAKING mnemonic (Hymes 1971, 1974):

- Setting or scene: the former for physical circumstances, the latter for sociocultural ones
- Participants: speaker/sender, hearer/receiver, conceptualizer, etc.
- Ends: the purposes and goals of the speech event
- Act sequence: the form and order of the content being expressed in the event
- Key: the affective characteristics (e.g., tone, manner, or spirit) of the event
- Instrumentalities: the channels and forms of the speech code (which includes styles)
- Norms of interaction and interpretation: the social rules governing the event
- Genres: the (sub)type of speech act or event

These parameters are broadly applicable to all speech events, and general types of speech events can be discerned “by keeping the values of some parameters constant while varying other parameters” (Seifart 2008:67). Because the SPEAKING model is best understood as a heuristic rather than a discrete checklist of components (Hymes

¹⁴Because my illustrative examples in §4 contain discussion about the Pakin community’s knowledge of local animals, I consider this paper to be in the domain of ethnobiology solely by virtue of topic, as I have no formal training in the frameworks or methodologies of ethnozoology.

¹⁵Not all communicative events and interactions are in the medium of language (e.g., non-verbal communication realized through gaze, or manual and pedal modalities). As such, some define ‘discourse’ even more broadly as “meaningful symbolic behavior” regardless of modality (Blommaert 2005:2). Ethnobiologists also make this observation with regard to LEK (Ticktin 2013).

1971:53), fieldworkers can focus on those parameters that are most relevant in identifying speech types and genres, with the caveat that this is not necessarily used in practice to comprehensively classify every single type of communicative event in the speech community (Seifart 2008:67–68). Such heuristics are crucial to the ethnographic discovery process, since “patterns of usage are not always noticeable or easily interpretable” (Hill 2006:115).

Talking about one’s connection to the environment is a pervasive part of everyday life in many communities, as I continue to realize through my long-term participant-observation on Pakin. It is perhaps a common fieldworker experience to appreciate that discourse is “absolutely saturated with references (lexical, semantic, morphological and phonological) to the local ecology” (Harrison 2005:31). Realizations of LEK, then, are not exclusively tied to any particular speech type, style, register, or genre; LEK ‘lives’ in speech, in all of its forms. I recall watching a particular volleyball game played by the students of the class I taught at Pakin Elementary School during my time living and working on Pakin as a Peace Corps Volunteer (2006–9). In this game, they often yelled *Anomw!* with each volley; the best free translation would be ‘Eat this!’ with the literal gloss as *ano-mw* (edible.cooked.POSS.CLF-2SG.POSS).¹⁶ As the game progressed and stakes raised, the students engaged in a clever play-on-words by adding the names of specific food crops after the possessive classifier, such as *Anomw pwula!* ‘Eat your cooked giant taro!’ and *Anomw uush!* ‘Eat your cooked banana!’ (The free translations simply do not do justice.) Each volley elicited another crop name, and I realized that students were displaying their knowledge of local plants that were relevant not only to their diet in general, but also to the particular context of one-upsmanship. I assert that this is as legitimate a realization of LEK as any formal elicitation session with a master gardener—the students are displaying knowledge of their local environment in a particular social context, and it is no less meaningful than the display of LEK by an adult in a non-recreational setting.

I find the SPEAKING model, then, to be more useful as an ethnographic tool to describe the context of individual moments in which LEK emerges, rather than a diagnostic to create a typology of all possible speech types in which LEK could possible emerge, since LEK could conceivably arise in any context (oftentimes serendipitously).¹⁷ Another important apparatus for the annotation of the documentary corpus containing communicative events is the analysis of speech through Discourse

¹⁶The International Phonetic Alphabet (IPA) values for the orthographic symbols used for Mortlockese (based on the official Chuukese orthography) are as follows: <á> = /æ/, <é> = /a/, <ú> = /u/, <ó> = /ɔ/, <mw> = /m^w/, <ng> = /ŋ/, <pw> = /p^w/, <ch> = /tʃ/, <sh> = /ʃ/, <CC> = /CC/, <VV> = /VV/. Other symbols such as <s> and <o> have their expected IPA values. Exceptions to the Leipzig Glossing Rules are as follows: AFTAGF, tag for affirmation; ANIM, animate; CONST, construct-genitive; EMPH, emphatic mood; EXIS, existential; GNR, general; NUM, numeral; PREP, preposition; PROX1, first degree of proximity (near speaker); PROX2, second degree of proximity (near listener); REAL, realis; STATV, stative.

¹⁷One might see the ethnography—in whatever form, and however ‘thick’ (Geertz 1973)—as a type of apparatus that annotates the primary data in the corpus. The analysis of documented communicative events produces “another form of discourse in [the ethnographers’] own language and that shared by their readers and listeners—the famous ‘ethnographic narrative’—allowing [the ethnographers’] public to share knowledge about or produced by the other” (Franchetto 2006:184). Regarding the documentation and description of LEK, the challenge is to use ethnography (Blommaert & Dong Jie 2010) to engage in the “task of introducing...audiences to a particular universe” (Franchetto 2006:184)—in this context, the “worldview” in Berkes’s (1999) model about LEK.

Analysis. The frameworks and methodologies of this area of sociolinguistics allow one to explore questions such as, “Why did this piece of LEK emerge in this particular moment?” and “How does this interaction connect to the larger worldviews of stewardship, authority, and tradition in the community?” Asking such questions facilitates more nuanced investigations of how social institutions and worldviews—the two outer-most ellipses in Berkes’s (1999) model—are realized in discourse about LEK, more so than only listing lexical information in a table.¹⁸

Among the various methodologies available in Discourse Analysis, I find that IS provides the tools for turn-by-turn analysis and the theoretical mechanisms for connecting ‘brought-along’ moments to ‘brought-about’ ideologies (Giddens 1976, Rampton 1995, *inter alia*)—that is, bringing together discourse-as-practice with Discourse-as-Ideology (Bartlett 2004)—which I find applicable to the exploration of how LEK emerges in discourse between interlocutors, and to the emic analysis of this body of knowledge, practices, and beliefs. IS is a framework that approaches interactive discourse from a social constructivist perspective: language is where social life is created, and analysts can point to moments in everyday language use as instances of how people make sense of the world. Participants of interactional discourse are constantly inferring meaning—pragmatic, social, propositional, and so forth—from each other’s utterances.

IS researchers employ the ‘contextualization cue’ as a fundamental tool to ascertain the linguistic and non-linguistic features in the interactional discourse that allow interlocutors to infer such kinds of meaning. Contextualization cues are “any feature of linguistic form that contributes to the signaling of contextual presuppositions,” which emerge as “constellations of surface features of message form...the means by which speakers signal and listeners interpret what the activity is, how semantic content is to be understood and *how* each sentence relates to what precedes or follows” (Gumperz 1982:131, *italics in original*). Linguistic contextualization cues can include anything from the potential range of linguistic expression, such as lexical choice, prosody, syntactic inversion, the use of evidentials, and code-switching. Non-linguistic cues include gaze, modal and pedal interaction, and facial expression.

Also fundamental to IS analysis is the incorporation of contextual information that frames the communicative event (e.g., ethnographic information about the community, knowledge of social expectations, and background familiarity of the interlocutors’ linguistic patterns), which provide the information that allows the analyst to make claims about an interlocutor’s inferences at any given moment in the discourse. Researchers such as Bucholtz (2011:394) emphasize that “ethnographic knowledge must be combined with interactional analysis to appreciate the full import” of any given speech event.

To briefly illustrate, consider the following hypothetical example, taken from my experiences as a teacher in Pakin Elementary School; in this scenario in a Micronesian classroom, the teacher asks if the student has completed an in-class paper assignment:

¹⁸I would like to thank Lyle Campbell (pers. comm., 2012) for this reminder: “Until you have an emic understanding (analysis) of [a community’s LEK], just collecting it doesn’t allow you to do much with it.”

- Teacher: *Uaa wás?* ‘Are you finished?’
 Student: [raises and lowers eyebrows, but does not speak]
 Teacher: *Iwe, waato.* ‘Ok then, bring it here.’

In order for the teacher to correctly infer the meaning of the student’s action, she or he must have tacit knowledge about how question-answer pairs are managed in that particular community. As is the case in many Austronesian cultures, people positively reply to affirmation questions non-verbally with the slight raise and lower of both eyebrows. For the teacher and student in this hypothetical interaction, such knowledge is tacitly understood. The analyst, however, must explicitly rely on such ethnographic information to analyze the interlocutors’ inferences of such contextualization cues: the student ‘correctly’ infers that an affirmation question is being asked and replies in the culturally expected way, and subsequently the teacher ‘correctly’ infers that such eyebrow-raising-and-lowering is the student’s intended answer because of the request for the assignment sheet. With a simple non-verbal gesture, the student is conveying to the teacher a message such as, “I understand your question, I affirm it, and I do so with the respect that is socioculturally expected of me.”¹⁹

The attention to language and discourse in the context of documenting LEK is nothing new. Consider, for example, the legacy of Dell Hymes’s work studying the traditional narratives of Native American communities; he considers the “competence...that underlies and informs such narratives” to include “knowledge of what the fish in the rivers are like, and when grizzly bears last were seen in Oregon” (2003:vii–viii). Many projects focus on LEK as documented in traditional narratives (e.g., Gonzales & Bustillos 2012, Nunn 2009, Si 2011, *inter alia*). Others take a critical approach to Discourse Analysis when discussing LEK (e.g., Bartlett 2004, Procter 1999, *inter alia*). I am not aware, however, of any researchers working in IS who explicitly frame their projects with regard to LEK. This paper is a continuation of my own work (Odango 2015b) in which I utilize IS methodology as a means to analyze the discourse I document about LEK in the Pakin community.

3. Linguistic and ethnographic setting To illustrate the application of the discourse-based language description of LEK I propose in this paper, I draw upon Mortlockese speech as recorded from members of the Pakin community (see Odango 2015a for expanded discussion). Mortlockese (*kapsen Mwoshulók* as a general local endonym) is a member of the Chuukic group of Nuclear Micronesian languages (Bender et al. 2003, Lewis et al. 2015). It is primarily spoken in the FSM—an independent nation in free-association with the US (Figure 2)—in the Mortlock Islands, a chain of atolls to the southeast of Chuuk Lagoon in Chuuk State (Figure 3).

¹⁹One might get a better appreciation of contextualization cues and the analysis of inferences between interlocutors in examples of ‘troubled talk’ or misunderstanding, that is, examples in which there is a breakdown of expected inferences and frames (e.g., the well-known “so y’re gonna check out ma ol lady, hah?” interviewer-interviewee example from Gumperz 1982:133). Nevertheless, interactions that proceed ‘smoothly’ between interlocutors are just as worthy of analysis in IS, since the unmarked scenarios of ‘untroubled talk’ allow for more nuanced understanding of ‘troubled talk.’

²⁰The maps in Figures 2–5 are courtesy of Danko Taboroši, Island Research & Education Initiative.



The *shóón Pakin* ‘people of Pakin’ engage in agroforestry—growing mostly *nú* ‘coconut’ (*Cocos nucifera*), *máái* ‘breadfruit’ (*Artocarpus altilis*), and *uush* ‘banana’ (*Musa spp.*)—as well the farming of *pwula* ‘swamp taro’ (*Cyrtosperma merkusii*), *ioot* ‘dryland taro’ (*Colocasia esculenta*), and other tubers such as *muvekemuvek* ‘Polynesian arrowroot’ (*Tacca leontopetaloides*). Imported rice is a contemporary starch staple. Apart from subsistence lifestyles, copra harvesting and fishing of both pelagic and reef/lagoon fish serve as the primary sources of income. Animal husbandry focuses primarily on free-range *piik* ‘pig,’ which serve not only as important sources of protein during major feasts but also as income, especially important in Pohnpei State

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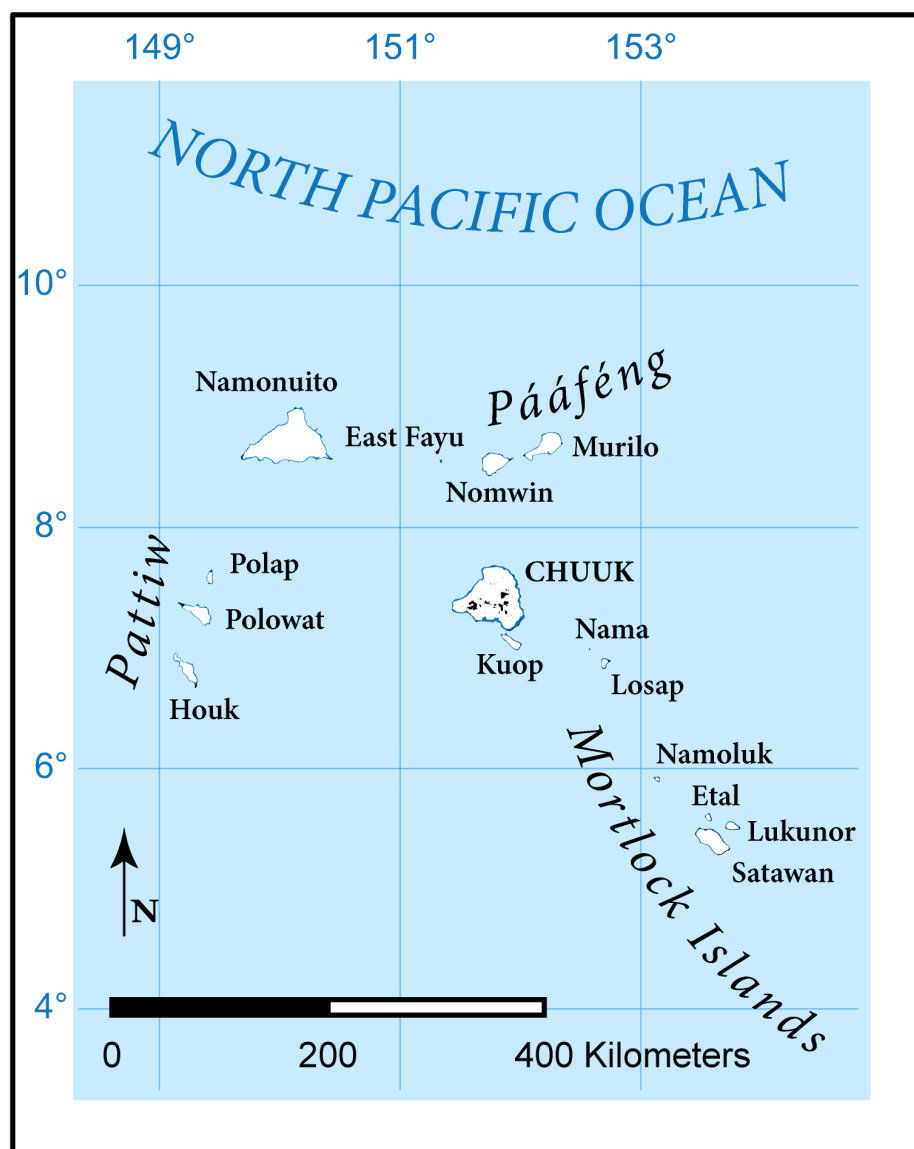


Figure 3. Map of Chuuk State

since pigs are one component of the most highly-valued aspects of Pohnpeian culture, the other two being kava and yams (*sakau* and *kehp*, respectively, in the Pohnpeian language). Other major sources of protein include *malek* ‘chicken,’ common reef fish such as *pwuláálei* ‘orangespine unicornfish’ (*Naso lituratus*), common bottom fish such as *arong* ‘bluefin trevally’ (*Caranx melampygus*), common pelagic fish such as *sangir* ‘kawakawa tuna’ (*Euthynnus affinis*), crustaceans such as *úúr* ‘spiny lobster’ (*Panulirus versicolor*), and mollusks such as *ttó* ‘clam attached to rocks’ (*Hippopus*

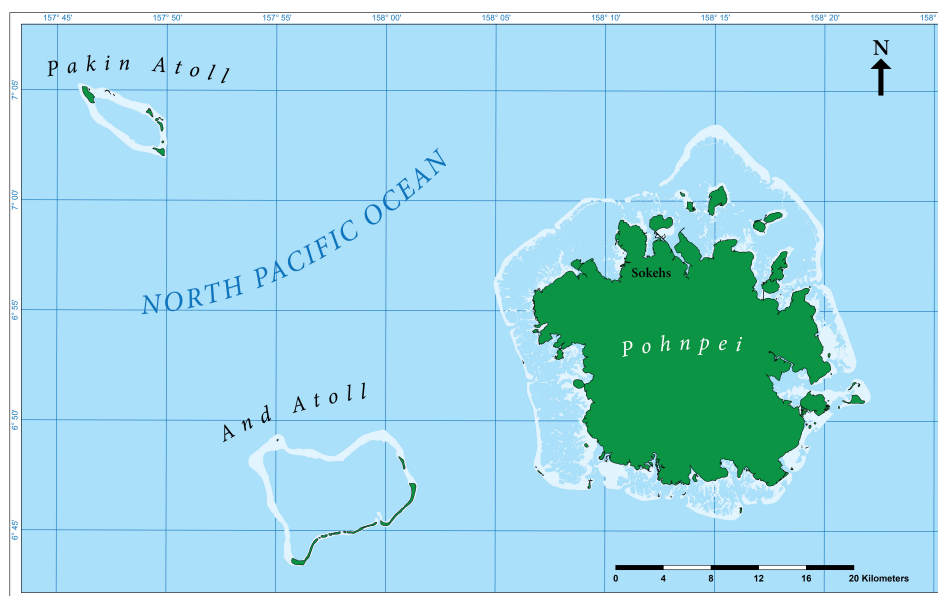


Figure 4. Map of Pohnpei Island, Pakin Atoll, and And Atoll

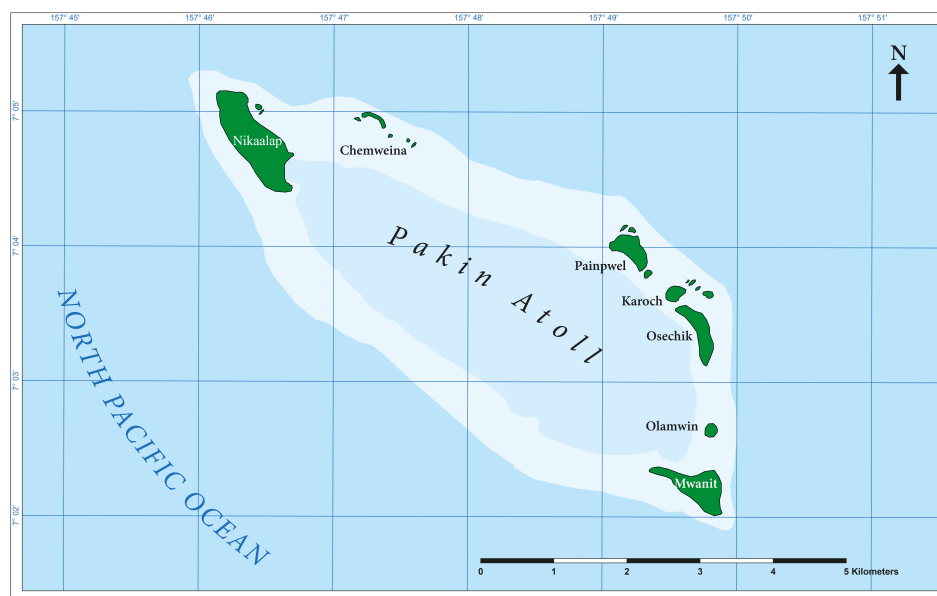


Figure 5. Map of Pakin Atoll

sp.). Primary sources of potable water are from rain catchment systems and hand-dug wells; because Pakin is relatively close to Pohnpei—one of the wettest regions of geographic Micronesia—the annual rainfall on Pakin “is somewhat above the low islands’ average” (Taboroši & Martin 2011:9).

The Pakin community—a ‘diaspora of a diaspora’—maintains persistent connections with Mortlockese communities in Sokehs, Sekere, and Palikir, as well as with those from the *in situ* Mortlocks. The dialectal representation on Pakin is roughly divided between the Lukunosh and Satawan dialects, with a few speakers of other dialects such as Losap and Té also residing on the atoll. Accordingly, it is best to describe the linguistic situation as a Pakin gelect, whereby ‘gelect’ denotes the speech system of a particular geographic region (cf. Hoffman 2006). The examples I use in this paper in §4 are taken primarily from discussions with a member of the Pakin community who speaks the Lukunosh dialect; the speech system represented by such examples is best described as ‘Pakin Lukunosh Mortlockese,’ which is shorthand for ‘the Pakin gelect of the Lukunosh dialect of Mortlockese.’ My initiation into the participatory observation method came through my service as a Peace Corps Volunteer on Pakin, where I was assigned as a teacher in Pakin Elementary School. It is from this experience that I gained conversational fluency in Pakin Lukunosh Mortlockese, which I have maintained through subsequent research fieldtrips from 2010 to 2014.

4. Application of discourse-based methods In this section, I provide examples of the application of the discourse-based methods I propose in this paper. With regard to discovery, I make some comments about the sampling method that led me to produce the recording, as well as provide a description of the ethnographic setting via the explication of the SPEAKING parameters (following Seifart 2008:70–71).²² With regard to analysis, I follow IS protocol in using transcripts of the excerpts to facilitate the discussion of the moment-by-moment analysis of the communicative events. Within the frameworks of IS, Conversation Analysis, and other related fields that analyze naturally-occurring discourse, each single case is viewed as “instance of produced order” (Liddicoat 2007:10), and through the gradual collection of many single cases, the analyst can identify regularly occurring patterns. Given the limitations of my present study, my discussions serve primarily as illustrations of one kind of approach that can be taken to analyze LEK discourse in the long run, as a means to identify regularly occurring patterns. In addition to the contextualization cue, I employ other tools taken from Discourse Analysis more broadly—stake inoculation (Wetherell 2001, following Potter 1997), epistemic stance (Mushin 2001, Englebretson 2007),²³ and narrative analysis (Labov 1972)—employing them as necessary for the specific excerpts I present here. These tools allow one to identify how little-d discourses of everyday interaction and big-D Discourses of society shape one another (Gee 2011).

I follow the Discourse Transcription 2 (DT2) conventions of Du Bois 2006, which was preceded by DT1 as codified in Du Bois et al. 1993 (see the Appendix for transcription conventions). Note that in DT2, lines correspond to intonation units (IUs) rather than syntactic clauses, and punctuation denotes intonation contours rather

²²Because of the limited scope of this paper, I do not attempt to produce as ‘thick’ a description as possible (Geertz 1973).

²³Mushin (2001) uses the modifier ‘epistemological,’ whereas others in the literature on stance use ‘epistemic’ (e.g., Biber & Finegan 1989); I use the latter in this paper.

than standard orthographic practices. The free translation lines are purposefully kept ‘thin’²⁴ since primary discussion is about the target language of Mortlockese.²⁵

4.1 *Liakak, urupap, mé kiliing* ‘whimbrel, plover, and turnstone’ On May 31, 2009, with my Peace Corps service just recently completed and after returning to Pohnpei from Pakin, I engaged in a semi-structured interview (Huntington 1998) with the high chief of Pakin at his home in Sokehs on Pohnpei. The chief’s Pohnpeian title is ‘Sounihrek Pakein.’²⁶ Sounihrek was born on Pohnpei and raised on Pakin. He currently teaches in an elementary school in Sekere, but has taught in Pakin Elementary School in the distant and recent past. He travels often out to Pakin as part of his chiefly responsibilities. Even though this particular individual currently resides on Pohnpei most of the time throughout the year, I consider him to be a *shóón Pakin* ‘person of Pakin.’²⁷

In this interview, I ask Sounihrek to identify Mortlockese names of local birds. At that time, I was engaged in the development of a handbook of Mortlockese words and phrases, to be published by Island Research & Education Initiative (iREi), a Pohnpei-based non-governmental organization whose projects include the development of literacy materials to support the biocultural and linguistic diversity of geographic Micronesia. The primary goal of my interview with Sounihrek was to elicit the Mortlockese names, and nothing else; as such, I consider this interview session to be an example of externally motivated sampling.²⁸ As an elicitation tool, I used color posters of Micronesian land and shore birds, produced by the US Fish and Wildlife Service in cooperation with the FSM Department of Natural Resources (illustrations by H.D. Pratt). I video-recorded the interaction as a means to keep track of his utterances as he pointed to the poster.

The *setting* is Sounihrek’s home in Sokehs, specifically on the *pwalang* ‘porch area,’ which I observe to be a locus for conversation among household members (i.e., a *scene* where conversation naturally emerges on a regular basis). There are at

²⁴I do not attempt to approximate the English free translation to match the target language example with regard to truncated words, false starts, vocal quality, and so forth.

²⁵Because the examples in §4 solely focus on Pakin Lukunosh Mortlockese speech (with a few exceptions), I use the exonym ‘Mortlockese’ in this section as a shorthand for ‘Pakin Lukunosh Mortlockese.’

²⁶Even though I have expressed written permission from Sounihrek Pakein to use his real name in academic publications, I follow IS protocol in not using his real name. Out of respect for local tradition, however, I will refer to him as ‘Sounihrek,’ which is a culturally acceptable short form of address for the holder of that title, rather than using a pseudonym.

²⁷As I have learned in the course of my time living and working in Pohnpei State, membership to a coral atoll community is not solely determined by the physical presence of the individual on the atoll; factors such as language, family and clan, fulfillment of cultural obligations, remittances, and regular visits keep individuals connected to their homes.

²⁸At that time, lexical information was the only relevant aspect of my immediate project goals, as I had not yet entered my graduate studies at the University of Hawai‘i at Mānoa, and thus I was not familiar with theories and methods of language documentation and IS, or with LEK as a concept. Even though this recording was made at a time when I was not formally engaged in linguistic research or affiliated with a research institution—and thus not required to undergo institutional review board approval for data collection—I have explicit permission from the interlocutors featured in this recording to use this example in this paper (pers. comm., 2014).

least four *participants*: Sounihrek, his wife whose title is ‘Kidinihrek Pakein,’²⁹ myself, and the imagined audience as represented by the video camera. My primary *end* is solely to elicit lexical knowledge. The *act sequence* starts with my general questions of ‘What is this?’ and ‘What do you call this in Mortlockese?’ but the discussion eventually transforms into a primarily monologic sequence by Sounihrek as he engages in the performance of a traditional narrative. The *key* is generally playful as Sounihrek juggles positions of a steward of traditional knowledge and a person who has forgotten some local names; this key emerges from the kind of interpersonal relationship I have forged with Sounihrek over the years, in the course of many formal and many more informal conversations with him in Mortlockese. The *instrumentalities* include an informal register, one that reflects the casual nature of the semi-structured interview and the ways in which stories are shared among community members. The primary *norms* that govern this communicative event are the expectations of an interview (i.e., the interviewer holds the floor) in contrast to the expectations of a *tittilap* ‘story’ (i.e., the storyteller holds the floor). As such, the two primary genres represented here are the interview and the narrative, but as in any communicative event, briefer instantiations of other genres occur, such as pretopical talk (Maynard & Zimmerman 1984) and even a song extract in the narrative. I did not engage in this lexically motivated elicitation session with the intent to document genres like narrative and song, and it was not until much later in my graduate studies that I realized the inherent value of what I considered at the time to be ‘peripheral’ talk—talk that provides insights into LEK and cultural worldviews (i.e., big-D Discourse) in the form of a traditional narrative that features supernatural elements of a woman flying from one island to another, as well as the speech that surrounds that narrative retelling (i.e., little-d discourse). What I once considered to be ‘epiphenomenal’ in the research frame of lexical elicitation, I find valuable in the research frame of the discourse-based language documentation of LEK.

4.1.1 Shift from interview to narrative One segment of the interview is presented here as part A of the excerpt, illustrating the shift from an interview into a narrative:

²⁹Similar to my use of ‘Sounihrek,’ I defer to local tradition and use the shortened version of her title as ‘Kidinihrek’ in this discussion.

Excerpt. Kiliing, urupap, mé liakak ‘turnstone, plover, and whimbrel’

Part A—*Ia iteer* ‘what are their names’

- 01 EMERSON; Ngé maan (0.6) maan aroisset kké.
but animal animal shore here
‘But as for the birds these shore birds here.’
- 02 Ekké.
these
‘These.’
- 03 Ia itee-r.
Q name-3PL.POSS
‘What are their names?’
- 04 SOUNIHREK; Ekkana shak raa úró kiliing ngé urupap má –
those just 3PL.SBJ.REAL say turnstone but plover indeed
‘Those there they would just say turnstone and plover indeed’
- 05 (0.8)
- 06 I=sé kilee-i.
1SG.SBJ=NEG know-3SG.OBJ
‘I don’t know.’
- 07 EMERSON; [Aweewe] –
example
‘For example’
- 08 SOUNIHREK; [E=mi sokosoko-]
3SG.SBJ=STATV different
‘It’s different’
- 09 mi ee-u shak má ai=kai úró shak
STATV one-NUM.CLF just indeed 1PL.EXCL.SBJ=IPFV say just
kiliing mé raa –
ruddy.turnstone and 3PL.SBJ.REAL
‘it’s one kind indeed we would just say ruddy turnstone and they’
- 10 (0.4)

- 11 ... urupap, (Hx)
plover
'plover,'
- 12 (1.2)
- 13 <P> aa < /P>
uh
'uh'
- 14 EMERSON; Ngé efa –
but which.one
'But which one'
- 15 efa liakak,
which.one whimbrel
'which one is the whimbrel,'
- 16 SOUNIHREK; = ara- liakak,
tern whimbrel
'tern- whimbrel,'
- 17 (1.6)
- 18 Iaa liakak.
Q whimbrel
'Where's the whimbrel?'
- 19 (1.4)
- 20 Ie ie kútou iei liakak!
this this down.here now whimbrel
'This one this one down here this here is the whimbrel!'
- 21 (1.1)
- 22 EMERSON; <P> Ie < /P>,
this
'This one,'
- 23 SOUNIHREK; <P> Mm < /P>.
mm.hm
'Mm hm.'

((101 SMOV0069, 00:07:17.230-00:07:43.035))

Part A of the excerpt sets the stage for the change of floor between the interlocutors and the resulting change in act sequence and norms. In the discussion prior to this excerpt, I had simply asked Sounihrek to identify birds on the poster. I myself already knew most of the names from other elicitation sessions with Pakin residents, so I was partially interested in Sounihrek verifying the names, and partially I wanted to ascertain what other kinds of explanatory material he could provide about the birds, although such information was not necessarily going to be included in the final product of the project.

At the onset, I did not constrain Sounihrek's discussion in any particular way, allowing him to jump from bird to bird, pointing at the poster as necessary to images of particular species or identifying salient characteristics of their appearance. Early in the session, Sounihrek was very engaged in his discussion of *úúk* 'white-tailed tropicbird' (*Phaethon lepturus*), describing its fishing techniques and its interaction with other shore birds, thus facilitating a sort of zig-zag discussion across the poster of different birds. While he correctly names several birds with their Mortlockese name, he stumbles on the identification of the great frigatebird (*Fregata minor*), which he first identifies as *úúk* 'white-tailed tropicbird,' then through a series of repairs attempts to identify as *araar* 'black-naped tern' (*Sterna sumatrana*), both of which are incorrect. I am the one to identify it as *asaf*, which then triggers further discussion about frigatebird behavior in relation to the other shore birds he has previously identified (i.e., frigatebirds scaring smaller birds, forcing them to drop their catch). These interactive moments illustrate at least two relevant points: (1) there is a division in knowledge whereby the outsider remembers the names of the birds in Mortlockese (but does not know about their behavior), and the high chief explains the interrelated behavior of the birds (but does not always correctly remember the names in Mortlockese); and (2) the realizations of LEK are co-constructed through communicative events.

This preceding talk in which I demonstrate myself to be a possessor of some kinds of knowledge and Sounihrek of other kinds sheds light on the inferences the interlocutors make in the discourse illustrated in part A. Lines 01–03 illustrate my persistence on the interview frame, one that has clear norms: the interviewee has to produce the answer in order for the discourse to move forward. And while this is not a high-stakes communicative event (e.g., as compared to gatekeeper interactions), it is clear that previously Sounihrek has gotten some things 'wrong' whereas I have gotten them 'right' with regards to Mortlockese names; on the other hand, throughout this elicitation session, I was not directly interrogated by Sounihrek about my knowledge of shore bird behavior, folklore, nesting sites, and so forth, so there was no context in which I could have gotten something 'wrong.' There was a power differential skewed towards me since I was the interviewer. Indeed, there are signs in Sounihrek's speech to show that he mitigates his proximity to this body of LEK about shore birds, lest he make an incorrect statement.

In part A, the birds in question are next to each other in a row on the poster, in this sequence from left to right: *liakak* 'whimbrel' (*Numenius phaeopus*), *kiliing* 'ruddy turnstone' (*Arenaria interpres*), and *urupap* 'lesser-golden plover' (*Pluvialis fulva*). In

line 04, Sounihrek does not identify which bird is *kiliing* ‘ruddy turnstone’ and which is *urupap* ‘lesser-golden plover’ but rather lists those names, and for good reason: ruddy turnstones and lesser-golden plovers are often found feeding together in flocks, and as such are often difficult to tell apart from far away.³⁰ In contrast, Sounihrek does not include the name *liakak* ‘whimbrel’ in either line 04 or lines 09–11, and understandably so since the whimbrel is often seen feeding alone. It is only through my direct questioning in line 15 that *liakak* ‘whimbrel’ enters into Sounihrek’s discussion (starting in line 18). As part of the mental network of the smaller wading birds like *kiliing* ‘ruddy turnstone’ and *urupap* ‘lesser-golden plover,’ people like Sounihrek associate them together, but not always including *liakak* ‘whimbrel,’ as I have encountered in other discourse with Pakin community members. This pairing can certainly be instantiated in an elicitation context, such as a response to a direct question such as, “What other birds are usually associated with the ruddy turnstone, with regard to feeding patterns?” In this case, though, the pairing arises because the possessor of this knowledge chooses to make that pairing overt in his description.

In line 04, Sounihrek introduces the names with the phrase *raa úró* ‘they say,’ which places authoritative distance between him and the propositional knowledge: he may know that the names *kiliing* ‘ruddy turnstone’ and *urupap* ‘lesser-golden plover’ are associated with the birds he sees on the poster, but rather than asserting this knowledge based on his authority, he defers to the authority of what ‘they say,’ that is, people in general (very similar to the uses of *people/they say that...* in English). This is an overt realization of the reportive epistemic stance (Mushin 2001) he takes (i.e., not what he says, but what others say). This IU is followed by a lengthy pause in line 05, and then the phrase *isé kileei* ‘I don’t know (it)’ in line 06.³¹ This use of *isé kileei* ‘I don’t know’ is similar to instances of *I don’t know* or *I dunno* in English as a means for stake inoculation (Wetherell 2001:21, following Potter 1997). Sounihrek is managing his stake in the discursive moment, since he is ‘on the line’ if he claims knowledge about the Mortlockese names of birds in his local environment, yet fails to associate each one with the correct name. By distancing himself from authority—through the use of the generic third-person plural in line 04, a long pause in line 05, and the phrase *isé kileei* ‘I don’t know’ in line 06—Sounihrek is potentially mitigating the effects of what would happen if he were to ‘get it wrong,’ that is, if another more knowledgeable member of the community corrects him about the names—which is certainly plausible, since he is going on record in video format.³²

At this point in my description of the co-construction of LEK in this excerpt, it is clear that members of the speech community will manage their authoritative stance (Johnstone 2009) in relation to the (un)certainly they have about knowledge others believe them to possess. Whereas Sounihrek is eager to identify birds like *úúk*

³⁰See for example the discussion “Shorebird Feeding”: http://web.stanford.edu/group/stanfordbirds/text/essays/Shorebird_Feeding.html

³¹Even though the gloss indicates that this is a transitive construction, the inference made here is not that Sounihrek does not know a specific piece of knowledge relevant to the conversation, but rather he expresses his general uncertainty, which is pragmatically relevant in this context: he recalls the Mortlockese names, but he does not know to which bird they belong.

³²The understanding I have with Sounihrek is that the video recording was made for my own personal interest, and is not to be made publicly available.

‘white-tailed tropicbird’ in the early part of the discourse, he is considerably more hesitant to insist that he is an authority on the wading bird names. For me, especially as a learner in their community, this is a reminder that just because a member of the community may possess a range of propositional/procedural knowledge about her or his environment, it does not mean that she or he will display that LEK with consistent degrees of certainty at all times in all contexts.

Part B illustrates the changes that occur in floor-taking, genre, norms, and displays of authority.

Part B—*E úra* ‘one would say’

- 01 (0.7)
- 02 SOUNIHREK; (TSK) E=úra,
3SG.SBJ=SAY
‘One would say,’
- 03 (0.5)
- 04 ((audible ingression of air with tongue and upper teeth))
- 05 (0.8)
- 06 aa úra loomw aa,
3SG.SBJ.REAL say long.time.ago AFFTAG
‘one would say a long time ago do you follow,’
- 07 (((audible ingression of air with tongue and upper teeth)))
- 08 EMERSON; [<P> Meet </P>].
what
‘What.’
- 09 (1.0)
- 10 SOUNIHREK; aa (Hx) ((exhalation with audible glottal onset))
uh
‘uh’
- 11 I=sé kilee-i are urupap minnei are eie?
1SG.SBJ=NEG know-3SG.OBJ if plover among.them or this.one
‘I don’t know if it’s among the plovers or you see this one?’

- 12 I=sé kilee-i lei-n ekké mé ié.
1SG.SBJ=NEG know-3SG.OBJ among-CONST these and who
'I don't know which one among them and who else.'
- 13 EMERSON; Mm.
mm.hm
'Mm hm.'
- 14 (0.8)
- 15 SOUNIHREK; (TSK) E=úra (0.4) loomw.
3SG.SBJ=say long.ago
'One would say a long time ago.'
- 16 (1.1)
- 17 Llan Mwoshulók áá?
in Mortlock.Islands AFFTAG
'In the Mortlock Islands do you follow?'
- 18 Aa-r re=kai úra Satawan.
GNR.POSS.CLF-3P.POSS 3PL.SBJ=IPFV say Satawan
'What they would call Satawan.'
- 19 EMERSON; Mm?
mm.hm
'Mm hm?'
- 20 (0.7)
- 21 SOUNIHREK; Satawan má.
Satawan indeed
'Satawan indeed.'
- 22 E=úra,
3SG.SBJ=say
'They say,'
- 23 (0.9)
- 24 (TSK) .. a-man mwáán,
one-NUM.CLF.ANIM man
'one man,'

- 25 (0.6)
- 26 e=la allou.
3SG.SBJ=go defecate
'he went out to relieve himself.'
- 27 (0.7)
- 28 EMERSON; Aia.
where
'Where?'
- 29 SOUNIHREK; Ilik!
ocean.side
'The ocean side of the island!'
- 30 EMERSON; Iwe,
and.so
'And so,'
- 31 (1.2)
- 32 SOUNIHREK; e=la akk~allou má ngé mwót langalang.
3SG.SBJ=go IPFV~defecate indeed but sit on.haunches
'he went and was relieving himself while resting on his haunches.'

((101 SMOV0069, 00:07:43.036–00:08:09.255))

Line 01 of part B immediately follows line 23 of part A, in which Sounihrek affirms my identification of the image of the whimbrel as *liakak*; his *mm* in line 23 is the Mortlockese equivalent of the English *mm hm* back-channel reply. Given the medium pause between line 23 of part A and line 02 in part B, it would have been an opportunity for me to take the floor and continue with the elicitation frame we had been developing for the past few minutes. Instead, several important contextualization cues come together to signal the shifts. Three occur in lines 01–02: (1) a medium pause (relatively short compared to some of the longer ones in this excerpt) in line 01, followed by (2) an alveolar click, then followed by (3) the conventionalized phrase *e úra* 'one says' (the latter two in line 02). At the time of the recording, I knew from the discourse context that the third-person singular subject element is not an anaphor, but rather an expletive. Based on my extensive experience recording *tittilap* 'stories' on Pakin, I knew that *e úra* 'one says' is a discourse marker that introduces narrative sequences (much like English *once upon a time*), bracketing it off from other non-narrative talk. The pause and alveolar click are other elements that, when taken together with *e úra* 'one says,' allow the interlocutors to infer that a *tittilap* 'story' is about to begin, one that would have a connection to the birds just

recently mentioned, yet is still distinct from the activity that has just recently occurred (i.e., question-answer). As the following discussion illustrates, this particular story is one that contains supernatural elements that can be understood as instantiations of Mortlockese cultural worldviews. The LEK that emerges in this communicative event, then, shifts from lexical knowledge to narrative performance.

What is striking is that, while I have experienced many examples of storytelling in which the start of the narrative immediately begins after the equivalent of what occurs in line 02, it takes several IUs before Sounihrek reaches the orientation stage of the narrative (Labov 1972:221) in line 24. Sounihrek is engaged in delicate discursive work in lines 02–16: he is preparing to share insider’s knowledge about Mortlockese culture, folklore, and LEK with an outsider—one whom he has known for a few years by that point, but an outsider no less. I infer this because his speech in lines 02–16 is laden with dispreference markers, which cross-linguistically/culturally are realized as “delays, requests for clarification, partial repeats, and other repair initiators, and turn prefaces” (Pomerantz 1984:70). Immediately after line 03, there is an audible ingression of air between the tongue and upper teeth. In Mortlockese communities, sounds like alveolar clicks and sucking in air through the teeth signal a range of face-threatening acts, ranging from ambivalent stalling and mild disagreement to disdain and even outright chastisement of young children (cf. Higgins’s (2010:75) observations about alveolar tongue clicks in Tanzania).

In lines 05–07, Sounihrek essentially offers a structural repeat of lines 01–04. There are some small differences, such as the longer pause, the lack of the alveolar click (although there is ingression of air in line 07), and the longer version of the conventionalized narrative opener, this time *aa úró loomw* ‘one would say a long time ago.’ Crucially, Sounihrek includes an important discourse marker at the end of the IU: *aa*, which is best translated as ‘do you follow.’ The affirmation tag *aa* ‘do you follow’ allows speakers to take certain kinds of stance, especially epistemic stance (Mushin 2001) in the sense of ‘commitment’ (Englebretson 2007:17). The speaker has already committed to the utterance and wants to ensure that the listener is ‘on board.’ This is a realization of the shift that is taking place: who has taken the floor (Sounihrek), what communicative act is going to take place (*tittilap* ‘story’), who will be leading the act (Sounihrek as the storyteller), the expected norms (I will listen, rather than interrogate), and whose authority is being displayed (his, not mine). This is still a shift in process. Sounihrek still has not launched into his narrative, as he gives another audible cue in line 07 (i.e., sucking in air), indicating that he is still in preparation. The fact that lines 05–07 parallel lines 01–04 indicates a repetition that further delays the main communicative event.

Sounihrek’s ingression of air in line 07 overlaps with my WH-question *meet* ‘what’ in line 08, which is my attempt to ‘move things along.’ I am unsuccessful in that what follows are more delay markers by Sounihrek. Line 09 contains a long pause, followed in line 10 by *aa* ‘uh’ and then by a glottal-onset exhalation. Lines 11 and 12 begin with *isé kileei* ‘I don’t know,’ yet other instances of stake inoculation in that Sounihrek is not sure which birds are involved in the story he is about to tell, thus mitigating the negative effects of getting such an important detail wrong. After my

back-channel reply in line 13, Sounihrek gives yet another conventionalized opening statement in line 15, which parallels those given in lines 02 and 06—another delay strategy. One of the longest pre-utterance silences in the careful construction of the beginning this narrative is in line 16 (1.1 seconds), when Sounihrek finally enters the narrative orientation (i.e., the discussion of the setting, characters, and preceding actions (Labov 1972:221)).

The assessment discourse marker *áá* (freely varying with *aa*) appears at the end of the IU in line 17. Another discourse marker that occurs in the right-periphery is *má*, which is best translated as ‘indeed,’ but has many pragmatic functions, such as realizing epistemic stance. I produce my back-channel *mm* in line 17 with rising intonation, which can be interpreted as a request for clarification in Mortlockese. In retrospect, I did not intend to do so, since I was already very familiar with the meaning of *Satawan* as the name of the island in the southern Mortlock chain in Chuuk State.³³ I infer that Sounihrek interprets my back-channel as a request to clarify what he just recently said, so he repeats *Satawan*, but with the discourse marker *má* as a tag.³⁴ This is yet another realization of the authority Sounihrek is discursively constructing in this interaction: if he inferred that I was not clear on the relevance of *Satawan* to the narrative orientation, all he has to do was repeat it emphatically as *Satawan má* ‘Satawan indeed,’ thus forcing me to draw upon whatever resources I had at the moment to understand the situated relevance of *Satawan* without his resorting to defining *Satawan* for me.

It would appear that Sounihrek can finally move on with the story. However, since the orientation involves the discussion of background information before the description of temporally ordered action (Labov 1972:218–219), one still has the opportunity to potentially stall. I infer that Sounihrek does so, as shown by the frequent long pauses he takes before continuing with his utterances (lines 23, 25, and 27). Note that line 32 contains the imperfective form *akkallou* ‘was relieving himself,’ which is consistent with the morphosyntactic characteristics of orientations in which the storyteller describes events that were going on “before the first event of the narrative occurred” (Labov 1972:221). (The continuation of this excerpt is discussed in the next section.)

I cannot conclusively claim that the motivation for Sounihrek’s delay of the narrative was due to his uncertainty of his stewardship of the knowledge, or a weighing of what is at stake for him if he tells the story (and gets parts of it wrong), or his ambivalence towards sharing insider knowledge with an outsider. And perhaps Sounihrek was stalling for dramatic effect, since a master storyteller would be aware of audience expectations and would have the ability to manipulate those expectations in the performance. Nevertheless, I am certain that the constellation of dispreference markers used to shape the introduction of the narrative brackets off the start of the orienta-

³³The endonym of that islet community in the Mortlocks is <Satowan>, but <Satawan> reflects the pronunciation of Mortlockese speakers residing in Pohnpei State.

³⁴This is an example of miscommunication on my part as an interlocutor: Sounihrek is ‘correctly’ inferring a question based on the contextualization cue of rising intonation, but posing the question is not appropriate in the first place since Sounihrek’s interlocutor (i.e., me) already has prior knowledge of the place, which Sounihrek assumes.

tion from the rest of the preceding talk, which was dominated by my interrogation. At that time, I could infer that I was leaving my ‘turf’ and entering into Sounihrek’s. This inference changes the way I interact with him as he tells the *tittilap* ‘story’: I had been an audience to his and other people’s *tittilap* ‘story’ enough times to know that as a ratified listener, I had a role to play and norms to follow, different from those expected of an interviewer.

4.1.2 Managing disbelief In part C, Sounihrek continues the narrative, describing the sequence of events that lead to the complicating action following the orientation (Labov 1972:221). Line 01 of part C is the very next IU immediately following line 32 of part B.

Part C—*Re loomw* ‘the people of long ago’

- 01 EMERSON; Mm.
mm.hm
‘Mm hm.’
- 02 (1.1)
- 03 SOUNIHREK; Iwe # e-man shóópwút aa ituwuu.
and.so one-NUM.CLF.ANIM woman 3SG.SBJ.REAL went.outward
‘And so a woman went outward (to that place).’
- 04 (1.0)
- 05 Ituwuu aa,
went.outward 3SG.SBJ.REAL
‘(She) went outwards and (said),’
- 06 (0.6)
- 07 <F> Pwokkas!
smelly
‘Smelly!’
- 08 Pángngau!
defecate.bad
‘Gross!’ (literally ‘bad shitting’)
- 09 Allounggau </F>!
defecate.bad
‘Disgusting!’ (literally ‘bad defecation’)

- 10 (0.9)
- 11 Iwe aa súu-la ngén-ún mwáán=we aa?
and.so 3SG.SBJ.REAL fly-away soul-CONST man=DIST.SG AFFTAG
'And so the man was utterly surprised do you follow?'
- 12 (1.3)
- 13 Aa úra <F> een me Iiap </F>.
3SG.SBJ.REAL say 2SG PREP Yap
'He said you go to Yap.'
- 14 (2.3)
- 15 EMERSON; [E=féét]?
3SG.SBJ=happen
'What happened?'
- 16 (2.3)
- 17 SOUNIHREK; <P> [#] Aa úró </P>,
3SG.SBJ.REAL say
'He said,'
- 18 <F> ee:n mé likin Iiap </F>!
2SG PREP environs.of Yap
'you go to the environs of Yap!'
- 19 (0.7)
- 20 aa # rei shóópwút=we.
3SG.SBJ.REAL (unclear) woman=DIST.SG
'He reprimanded the woman.'³⁵
- 21 EMERSON; Aa.
uh.huh
'Uh huh.'
- 22 (0.7)

³⁵This free translation of 'reprimanded' is my closest approximation based on the context. I suspect that the unclear syllable (indicated by #) and the morph *rei* (which has no independent meaning) are two syllables of one verb, but the exact meaning is opaque to me.

- 23 SOUNIHREK; Aa ioor shan- # aa shóópwút aa –
 3 SG.SBJ.REAL EXIS (unclear) 3 SG.SBJ.REAL woman 3 SG.SBJ.REAL
 ‘There was the woman’
- 24 (0.5)
- 25 maan-tá sange-i Satawan,
 drift-upward from-3 SG.OBJ Satawan
 ‘drifted upward from Satawan,’
- 26 (2.3)
- 27 EMERSON; E –
 3 SG.SBJ
 ‘She’
- 28 (0.3)
- 29 e –
 3 SG.SBJ
 ‘she’
- 30 e=siweli aiona-n?
 3 SG.SBJ=change.3 SG.OBJ body-3 SG.POSS
 ‘she changed her body (into a bird)?’
- 31 (0.4)
- 32 SOUNIHREK; <F> Aapw </F>!
 no
 ‘No!’
- 33 <HI><ALLEGRO> Aa min má –
 3 SG.SBJ.REAL EMPH indeed
 ‘It’s really’
- 34 arames –
 people
 ‘people’
- 35 shóópwút=we # aa sú,
 woman=DIST.SG 3 SG.SBJ.REAL fly
 ‘the woman flew away’

- 36 má pwe loomw kewe re loomw=kewe
indeed because long.ago then people.of long.ago=DIST.PL
re=mi kai pwai kilee-i ## [#] < /ALLEGRO>< /HI>,
3PL.SBJ=STATV IPFV also know-3SG.OBJ
'because indeed a long time ago the people of long ago also knew'
- 37 EMERSON;

[Iwe,]
and.so
'And so,'
- 38 aa sú ngane-i [Iiap],
3SG.SBJ.REAL fly toward-3SG.OBJ Yap
'she flew toward Yap,'
- 39 SOUNIHREK;

[aa]
3SG.SBJ.REAL

sú aa kai kék~ké-tou ree-n –
fly 3SG.SBJ.REAL IPFV IPFV~call-downward PREP-CONST
'she flew and was calling down to'
- 40 naú- aa-n faamli (H)
POSS.CLF GNR.POSS.CLF-CONST family
'her- her family'
- 41 <VOX> au=waa-la ree-n áta=na i=ké
2PL.SBJ=bring-away PREP-CONST child=PROX2.SG 1SG.SBJ=PST
túke-i –
cover-3SG.OBJ
'you all bring to that child what I covered'
- 42 i=ké pwalú fáá-n –
1SG.SBJ=PST cover.3SG.OBJ under-CONST
'I covered under'
- 43 (1.3)
- 44 sápei=kana < /VOX>.
dish=PROX2.PL
'those dishes.'

((101 SMOV0069, 00:08:09.256–00:08:50.042))

This part of the excerpt illustrates the emergent nature of LEK and how speakers instantiate connections between different aspects of their cultural worlds. LEK is rarely ‘laid out’ in full transparency; rather, pieces come together at relevant moments. Narrative demonstrates this well, as the culmination of the different components of a story—abstract, orientation, complicating action, evaluation, resolution, and coda (Labov 1972)—allow the details to emerge in a structured manner, one that often features an evaluation explicitly stated as a moral (although I cannot identify one in this particular narrative from Sounihrek). In this example, Sounihrek states in lines 23–25 that the woman *maantá sangei Satawan* ‘drifted upward from Satawan,’ and left it as that. This is arguably one of the most highly salient moments in the narrative, an event that is high on the scale of reportability or tellability (Norrick 2005).

As indicated by the very long pause (2.3 seconds) in the next line before my utterance, Sounihrek does not take the floor again, and leaves it to me to make an assessment of what he plainly said; he is taking a factual epistemic stance regarding all of these actions in the retelling of this *tittilap* ‘story.’ Factual epistemic stance often corresponds to “the *absence* of any representation of the source of information (and its status) in the construal...[which] typically implies either that the information is assumed to be known by anyone in the speech community as general cultural knowledge or, more generally, that the source of information is unimportant to the establishment of the validity of the information” (Mushin 2001:74, emphasis in original). The contextualization cues for such a stance usually include bald declarative statements, whereby the speaker has no need to indicate the source of information because it is a kind of general cultural knowledge. In this example, Sounihrek makes it plain that the woman simply *maantá sangei Satawan* ‘drifted upward from Satawan,’ with no need to qualify that source of information—at least not until I voice my disbelief.

My reaction is to find a way to connect these complicating actions to the previous discourse about the shore birds, which as of yet have not been mentioned in this narrative. Through a series of repairs (lines 27–30), I offer one interpretation in the form of a question, wondering if the woman has changed her form; I do not explicitly ask if she changed into a bird or another flying animal, but it is understood from the context. With great forcefulness as indicated by the forte and higher-pitched vocal quality in lines 32–36, Sounihrek wants to convince me that this is not a matter of metamorphosis—as if a human needed to become an animal in order to fly—but rather an example of the power of *re loomw* ‘the people of long ago.’ As part of his argumentation that a human can fly, he explains that people of generations long past knew how to fly; from my time on Pakin, I was also aware of the stories about superhuman feats that *re loomw* ‘the people of long ago’ were able to accomplish, such as moving large objects such as *faaú shól* ‘basalt rock’ and *waa* ‘canoe’ in the air. The analysis of such stories allows the analyst to ‘peek’ into the cultural worldview (i.e., the big-D Discourse) that shapes the way Mortlockese people interact with their environment. What Sounihrek infers as disbelief on my part—cued by a very long pause in line 26 followed by two truncated intonation units (i.e., my stuttering of *e*, the third-person singular subject proclitic) in lines 27–29—leads to further factual

Taken by itself, the fact that Mortlockese culture includes a belief that *re loomw* ‘the people of long ago’ had the ability to fly does not appear to tie in directly with LEK. The narrative is not yet complete, and the overt connection to shore birds has not been instantiated. As I demonstrate in the next section, both narrative and song serve as types of discursive/performative ‘glue’ which makes various (non-environmental) cultural models and beliefs fit into the paradigm of whatever element of the natural environment is being talked about (whether primarily or tangentially); such connections need to be inferred on the part of the listener.

Part D–*Shangashangatá* ‘flying upward’

- 01 SOUNIHREK; <HI> Raa aúnúúna </HI>.
3PL.SBJ.REAL put.feathers.on.3SG.OBJ
‘They put feathers on her.’
- 02 aúnúúna.
put.feathers.on.3SG.OBJ
‘put feathers on her.’
- 03 Raa [aúnúúna ené].
3PL.SBJ.REAL put.feathers.on.3SG.OBJ that.one
‘They put feathers on that one.’

- 04 EMERSON; [@@@] <HI> @@ < /HI>³⁶
- 05 SOUNIHREK; Raa nganne-i –
3PL.SBJ.REAL give-3SG.OBJ
'They gave it to her'
- 06 raa aúnúúna [ngé iwe aa
3PL.SBJ.REAL put.feathers.on.3SG.OBJ but and.then 3SG.SBJ.REAL
sú].
fly
'they put feathers on her and then she flew away.'
- 07 KIDINIHREK; [lé aa
who 3SG.SBJ.REAL
ngannei].
give-3SG.OBJ
'Who gave it to her?'
- 08 (0.6)
- 09 SOUNIHREK; Má:, ((turning towards Kidinihrek, who is behind Sounihrek))
indeed
'You know,'
- 10 re=máám- #-
3PL.SBJ=(unclear)
'they'
- 11 (0.9)
- 12 KIDINIHREK; Massúsú=[kana].
bird=PROX2.PL
'Those birds there.'
- 13 SOUNIHREK; [Maan] súsú=kewe ## –
bird flying=DIST.PL
'birds'
- 14 aa sú sange-i má,
3SG.SBJ.REAL fly from-3SG.OBJ indeed
'it (the group) flew from you know,'

³⁶My laughter here is from the tail end of a previous humorous exchange not transcribed in these excerpts.

- 25 (1.3)
- 26 EMERSON; [Shanga~shanga-tá] –
IPFV~fly-upward
“Shangashangatá”
- 27 SOUNIHREK; [Shanga~shanga-tá] weewen sú~sú-tá
IPFV~fly-upward meaning IPFV~fly-upward
“Shangashangatá” means flying upward.’
- 28 EMERSON; = sú-tá,
fly-upward
‘fly up,’
- 29 (0.9)
- 30 SOUNIHREK; (H) <F> Pwiin urupap=ie raa aúnúúnaa-ei </F>,
flock plover=PROX1.SG 3PL.SBJ.REAL put.feathers.on-1SG.OBJ
‘This flock of plovers they put feathers on me,’
- 31 (0.4)
- 32 aúnúúnaa-ei,
put.feathers.on-1SG.OBJ
‘put feathers on me,’
- 33 <P> shanga~shanga-tá </P> urupap.
IPFV~fly-upward plover
‘flying upward plovers.’
- 34 ###
- 35 EMERSON; = Áá ekké.
yeah these.
‘Yeah these.’
- 36 SOUNIHREK; <P> Áá.
yeah
‘Yeah.’
- 37 Kiliing=kana a,
turnstone=PROX2.PL AFFTAG
‘Those turnstones there do you follow,’

- 38 ngé i=sé kilee-i shak ie raa úra </P>,
but 1SG.SBJ=NEG know-3SG.OBJ just this 3PL.SBJ.REAL say
'but I don't know if this is what they say'
- 39 (0.9)
- 40 <SING> pwiin urupap=ie raa aúnúúnaa-ei,
flock plover=PROX1.SG 3PL.SBJ.REAL put.feathers.on-1SG.OBJ
'this flock of plovers they put feathers on me,'
- 41 aúnúúnaa-ei,
put.feathers.on-1SG.OBJ
'put feathers on me,'
- 42 shanga~shanga-tá.
IPFV~fly-upward
'flying upward.'
- 43 Aa sú aa:.
3SG.OBJ.REAL fly oh
'She flew away oh.'
- 44 Ie mé likin Iiap < /SING>,
this PREP environs.of Yap
'To the environs of Yap,'

((101 SMOV0069, 00:09:23.987-00:10:11.768))

The two most salient aspects of this part of the excerpt are (1) the co-constructed realization by the three interlocutors about the connection between Sounihrek's story and the shore birds that were previously discussed, and (2) the struggle and ultimate success on the part of Sounihrek to assert his knowledge and performance of a traditional song directly connected to the narrative. Regarding the former, line 07 introduces another 'voice' in the discussion, that of Sounihrek's wife, Kidinihrek.³⁷

³⁷Kidinihrek is an L1 speaker of Chuukese, a language that is closely related to Mortlockese, yet the two languages are not entirely mutually intelligible. While her Chuukese linguistic repertoire does not emerge as a significant factor in this particular interaction, it is worth pointing out that her speech maintains Chuukese characteristics despite the fact that her interlocutors are speaking in Pakin Lukunosh Mortlockese. For example, her utterance of *massúsú* 'birds' in line 12 is morphophonemically analyzable as /maan súúsú/ (animal fly) 'bird' (literally, 'flying animal'); Chuukese patterns of external word sandhi facilitate the anticipatory assimilation of the alveolar nasal *n* in /maan/ 'animal' to *s* preceding /súsú/ 'flying' (with accompanying vowel shortening). Mortlockese, however, has no such external word sandhi, thus Sounihrek's echoing of the word for 'bird' as *maan súúsú* in line 13. Crucially, though, Kidinihrek's unmarked use of Chuukese as her L1 amidst Pakin Lukunosh Mortlockese speech does not serve as a contextualization cue from which the interlocutors need to infer meaning (e.g., a potential contrast between Chuukese and Mortlockese identity/modality/culture/etc.).

Sounihrek's use of the third-person plural subject form *raa* 'they (did X)' is intended to be anaphoric, but it is not immediately clear from the context who it is that engages in the activity of *aúniúúna* 'put feathers on someone/thing.' Following Sounihrek's truncated IU in 05 of *raa ngannei* 'they gave it to her,' Kidinihrek's request for clarification of *ié aa ngannei* 'who gave it to her' in line 07 overlaps with Sounihrek's speech. This WH-question catches Sounihrek off guard, as I infer from his reaction in lines 09–10: he stalls on the discourse marker *má*, best translated in this context as 'you know,' turns to Kidinihrek, and attempts repairs of truncated words (the intended meaning of which I cannot decipher). After a long pause in line 11, Kidinihrek is the one to answer her own question: *massúsú kana* 'those birds there,' referring to the wading birds on the poster. Sounihrek's uptake in line 13 overlaps with the end of Kidinihrek's speech in line 12, signaling consensus, as well as some further explication in lines 14–17 (i.e., the probable origin of the wading birds and their connection to the woman's banishment to Yap). Kidinihrek already knew the answer, but it was important in the discursive event that the primary interlocutor—it was Sounihrek on whom I focused the camera—overtly verbalize it, and thus she 'nudges' him in that direction. One individual may possess any number of pieces of LEK, but the actual emergence and assembly of those pieces often happen in interactive discourse; in this case, it is in the interaction of a wife with her husband. In many narrative genres and performances, it is one voice that is featured as the authentic steward of knowledge—although even in storytelling, the audience to a storyteller may interact via non-verbal communication or minimal back-channels. In others, dialogism (Bakhtin 1981) and polyvocality (Clifford 1986) emerge.

Regarding Sounihrek's struggle to maintain the floor, Lines 19–23 are interesting for the emergence of parallel discourses, one maintained by Sounihrek, and another between Kidinihrek and myself. For the former, Sounihrek appears to be quoting material from either within the story or in the song featured in the story since his use of *aúniúúnaaei* 'put feathers on me' does not refer to himself, but rather the woman who appeals to the wading birds to put feathers on her to give her the ability to fly, as she has been banished to Yap. He struggles, however, to maintain the floor due to the overlapping speech between Kidinihrek and myself, indicated in lines 20–21, in which Kidinihrek further explicates what Sounihrek has already clarified in lines 13–15 (i.e., the birds put feathers on the woman). I continue this discussion with Kidinihrek in line 21, again overtly verbalizing what all three interlocutors already understand at that point in the discourse. Our discussion, however, is to the exclusion of Sounihrek and overlaps with his speech in line 19. As is made apparent later in the excerpt, the pair *áuniúúnaaei aúniúúnaaei* 'put feathers on me put feathers on me' is a formulaic phrase important to the structure of the narrative and the song. Sounihrek attempts to share that structure with us, but fails to take the floor in line 19: the first attempt ends as a truncated word, and the second one is produced at a higher pitch level, but is also unsuccessful, as he ends with a truncated IU.

Sounihrek allows Kidinihrek and myself to take the floor in lines 22–23 as we bring our parallel discussion to a close. I, however, do not completely finish my thought in line 20, as indicated by the truncated IU, since by that point, I realize that

Sounihrek has something to say; I remember in that moment noticing that Sounihrek was repeating the same phrase, and I could only infer that it was important to the discussion. In line 24, the two syllables Sounihrek utters are at such a low volume that it is difficult for me to discern, but given the context, they serve some kind of bracketing function, indicating that the previous overlapping talk and what is about to be uttered have to be separated. The quietly spoken material at the beginning contrasts with the main content, spoken at a normal level of loudness consistent with Sounihrek's previous IUs. Line 24, then, is Sounihrek's first successful display of his knowledge of an important formulaic element in the telling of this story. Neither Kidinihrek nor myself assert that we, too, know about that formulaic element.³⁸ By line 24, Sounihrek has retaken the floor and provides a more fleshed-out version of the formulaic phrase in lines 30–33. After a long pause in line 29, he recites the first part at a relatively loud level, then gradually decrescendos by line 33.

When I was recording this conversation, at no point did I expect Sounihrek to actually sing the verses of the song that is featured in this particular narrative, but he does so in lines 32–36. Note that in line 38, Sounihrek prefaces his performance with realizations of stake management, very similar to what he produces in line 06 in part A. He says *isé kileei shak* 'I just don't know' immediately followed by *raa úra* 'they say,' two ways to distance himself from what is potentially at stake here, if he were to sing the song incorrectly. Nevertheless, I found his performance in lines 40–44 to be completely competent, as there were no hesitations or repairs. This *kéél* 'song'—in E-flat major but with no discernible regular meter—is interesting in that it ends as it begins, on the dominant V of B-flat, as if leaving the line unresolved—and leaving the listener wanting more. I compare his performance to that of other storytellers who produce narratives that contain interwoven song elements, and Sounihrek is just as confident as others. It is entirely plausible that overt linguistic realizations of stake management prior to engaging in a performance—a production of linguistic and cultural competence that will be judged by the audience, including the imagined one represented by the video camera—is a conventionalized practice in Mortlockese storytelling. This can be discerned through the comparison of other narrative events like this one across the same speaker and other speakers; as such, my observations here are part of a longer work-in-progress about the discursive practices of Pakin community members in the medium of Mortlockese.

At the time of the recording in 2009, I thought that it was interesting that my request for him to clarify shore bird names led to his production of a narrative and his performance of traditional song elements, but it was just that: 'interesting,' but not 'relevant.' Such surrounding material was epiphenomenal to the work I had at hand. More than seven years later, I see now that this 'extra' talk has inherent value in and of itself: valuable to language documentation as naturalistic instances of specific genres, valuable to ethnobiology as realizations of cultural paradigms of LEK (e.g., the connections between *re loomw* 'the people of long ago' and wading birds, as pro-

³⁸I can only speak for myself: I had previously recorded narratives from various Pakin residents in which wading birds like the *urupap* 'lesser-golden plover' feature prominently, and so I was aware of phrases and song lyrics about birds placing feathers on protagonists, thus allowing them to fly.

duced through story and song), and valuable to sociolinguistics as examples of how little-d discourses accumulate to facilitate the socialization of community members to big-D Discourses about their cultural worldview. In other words, I have become interested in not just *what* people say, but also *how* they say it; the latter embodies the kinds of research questions that are just as important to the understanding of LEK as any plant or animal name that can be listed in a table.

The LEK encoded in this story about the man, woman, and wading birds came about in a particular discursive context. Over time, through the accumulation of more and more communicative events like this one—accretion in the lives of the interviewer and interviewee, the storyteller and audience member—these little-d discourses shape the big-D Discourses of the speech community with regard to how LEK is passed down: telling a traditional narrative about important local birds involves the management of one's own stake in the LEK, and such management is realized in discursive work through the use of linguistic features like conventionalized openers and overtly saying *isé kileei* 'I don't know.' This, in turn, shapes the way people position themselves toward the knowledge they possess, including identities related to *awennam* 'stewardship' (e.g., how Sounihrek chooses to represent himself as a possessor of the knowledge of this particular *tittilap* 'story').³⁹ Children must be socialized into these big-D Discourses by practicing the little-d discourses (Ochs & Schieffelin 2009); such practice and socialization are life-long processes. It is also worth pointing out that such kinds of productions of knowledge in Micronesia are not so readily accessible to outsiders, and so it truly is an honor that the high chief of Pakin found me a worthy audience to his *tittilap* 'story' and *kéél* 'song.'⁴⁰

4.2 Observations As I discuss at the beginning of this section, this study is inherently limited in that I have not engaged in enough analyses of single cases to either discern regular narration patterns in the speech of the Pakin community or to connect such speech to ideologies of ancestral supernatural feats. I offer the analyses in §4.1 in the spirit of illustrating the contributions that IS can make to the apparatuses of a language documentation about LEK. I make three broad observations, based not only on the analysis of these extracts, but also on my ongoing fieldwork with the community. The first is that connections between culture and the environment emerge in discourse. Whereas it is possible to 'simply' state in publications about Mortlockese LEK that there exists a link between *urupap* 'plover' and the woman who flew to Yap—and such information would suffice for some scientists—for other researchers, there is interest in asking *how* those links are instantiated in interactional discourse.

The second observation is that narrative in particular emerges as a means of contextualizing elements of LEK. Sounihrek's traditional narrative arises after general information about bird names is discussed. As a ratified listener, I infer that the narrator chooses to share information that situates the animal names in a meaningful context. Sounihrek knows that I have been an audience to *tittilap* 'story' before, both his and others' on Pakin, that I have seen wading birds on Pakin, and that I

³⁹I would like to thank Jojo Peter (pers. comm., 2014) for explicating this term to me.

⁴⁰I would like to thank Robert Andreas (pers. comm., 2013) for this reminder.

know where the island of Satawan is located. Such common ground allows the narrator to proceed with the narrative, something that offers new information to make the topic relevant to the daily lives of everyone in the audience, information that is often highly reportable or tellable (Norrick 2005). The interactional narrative analysis I take here is used in the Discourse Analysis literature for a variety of content areas, including co-constructions of immigrant identity between interviewers and interviewees (De Fina 2011) and race talk in high schools (Bucholtz 2011). I find it useful to adopt these frameworks and methodologies in the analysis of LEK, since they are largely applicable to any communicative event.

These first two observations are by no means unique to discourse about LEK, or to the Pakin speech community, or even to Mortlockese; such patterns can arise cross-linguistically/culturally about any conceivable topic. The empirical questions remain, however, with regard to asking *how* such patterns emerge in Mortlockese discourse about LEK and *what they mean* in larger-scale worldviews, questions that IS can attempt to answer through the analysis of primary data in a documentary corpus.

The third observation is that the in-field documentation of these kinds of LEK requires all three types of sampling approaches as discussed in Seifart 2008. If the researcher is interested in documenting ‘everything’ through convenience sampling but is constrained by logistical matters, she or he might restrict the project’s focus through externally motivated and systematic sampling. For example, documenting the LEK about Pakin shore birds requires that one record other kinds of speech (including more instances of traditional narratives/songs) about that topic. On the other hand, one could also focus on just investigating instances of intergenerationally transmitted narratives, regardless of LEK topic. As Seifart (2008:67) suggests, some parameters in the SPEAKING model can remain constant while others are variable if the researcher uses the model as an exploration tool. Furthermore, the in-field methods the researcher utilizes to achieve either depth or breadth will be context-dependent. Procedural speech about catching octopus, for instance, might best be collected when one records the speech of a consultant engaged in octopus hunting on the reef, rather than having a conversation in a room with pictures as elicitation tools.

4.3 Cross-disciplinary value? Regarding the kind of IS analysis I provide in §4.1, the ethnobiologist might ask, “What contribution does the study of case-by-case instances of LEK-in-discourse with micro-level analytic tools make to the overall understanding of this body of knowledge? What kinds of generalizations can be made about LEK for an entire speech community if the researcher is only working with a few minutes of discourse at a time, making claims about individuals’ idiolects and idiosyncratic sets of knowledge rather than getting at the ‘big picture’ of the community?” I admit that these are the kinds of challenging questions that must be asked when working on cross-disciplinary projects, using frameworks and tools from academic domains that do not often interact.

On the one hand, ethnobiologists are generally more interested in the content of LEK rather than the way in which LEK arises in interactive speech and the reasons why LEK emerge in a particular context. For IS researchers, there is interest in not

only both content and form, but also the connections between discourse-as-practice and Discourse-as-Ideology (Bartlett 2004). These discourses are themselves in a dialogic relationship. The big-D Discourses that are relevant to LEK might include authenticity and authority, conflicts between traditional ideologies and (late-)modern ideologies about resource management, how ‘good stewardship’ is evaluated by a community, and how the assertion of land and ocean rights through traditional speech genres are changing. Such big-D Discourses emerge through the careful study of little-d discourses, and yet the researcher must always be aware that everyday little-d discourses are shaped by the big-D Discourses that each interlocutor brings with her or him to the communicative event. Given the long-term nature of such studies, I present the analyses in §4.1 for the purpose of illustrating to an audience of researchers outside of IS what kinds of information can be gleaned from individual discursive moments. It is through the analysis and comparison of multiple individual discursive moments that the ‘big picture’ emerges. Furthermore, IS researchers often discuss the practical applications of their work in areas such as second language learning, English as a foreign language, medical practitioner training, and social justice addressing language-based racial prejudice (e.g., Higgins 2010:81–82). Nevertheless, there remains a dearth in the literature regarding IS approaches to the analysis of LEK and its contexts, as well as discussions about the applications that arise from such research.

These challenges in clarifying the connections that one field’s goals have to another (unrelated) field do not diminish the inherent value of cross-disciplinary work. Because I approach this particular project primarily from the perspective of language documentation—a field in which the apparatuses of the documentary corpus must be multifaceted—there is nothing in principle that prohibits ethnobiological analyses from coexisting with sociolinguistic analyses; such juxtaposition helps enrich the apparatuses. An IS analysis of interactional speech is as worthy an analytic apparatus as a plant voucher or a sketch grammar—the documentation of a speech system and the knowledge it encodes requires many different analytic lenses.

5. Conclusion This paper presents an example of a discourse-based approach to language documentation focusing on LEK, whereby I utilize the methodologies of the ethnography of communication and Interactional Sociolinguistics. Language documentation is inherently broad since, in principle, any kind of observable linguistic phenomenon is worthy of documentation and analysis. What is documented is not just the language itself, but also the content that is transmitted by that language. This paper focuses on LEK as a certain type of content that is ‘documentable’ and shows how it can be analyzed through IS methodologies that—while familiar in certain spheres of sociolinguistics—are generally underrepresented in language documentation as a whole. In order to understand all the levels of Berkes’ (1999) model of LEK (see 1)—most especially the outer two levels—linguists and ethnobiologists alike need to move beyond the lexicon and delve into the discursive ‘glue’ that holds together the knowledge, practices, and beliefs about people’s relationships to their local environment. Even though I frame this paper in the context of the calls for further

cross-disciplinary collaboration between language documentation and other fields, I admit that this paper is not an example of overt collaboration between myself and ethnobiologists. I leave the investigations of practical approaches to such kinds of collaboration for future discussion.⁴¹

In reflecting on stories from the Pakin community such as the one Sounirek shared with me, I find myself constantly returning to this question: *How does a child on Pakin learn a bird name, and all the associated information relevant to the cultural paradigm of that bird name?* I have never encountered a child on Pakin who was given a sheet of paper on which the LEK associated with that bird name was listed in a table for use as a reference guide.⁴² The children acquire the paradigm through their daily interactions with their community. Younger children observe their older siblings and elders catch the birds.⁴³ These youth learn in which tree the bird prefers to nest by climbing those trees. They memorize stories by reciting what they heard from their grandparents and changing the text ever-so-slightly so that the stories become their own. The older children joke with each other about how the song about the bird made one of their cohort cry as a young child. The most important classroom for these youth is their local environment, and their teachers are other community members.⁴⁴ The intersection of language documentation, ethnobiology, and Discourse Analysis can provide ways to better understand how such processes of inter- and intragenerational transmission of LEK occur, and—if it is in the purview of the researcher and the community—how to support such transmission for future generations through the applications of this kind of research.

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⁴¹See, for example, the materials I co-produced with Tamara Ticktin for the ethnobotany Master Class at ICLDC 3: <http://scholarspace.manoa.hawaii.edu/handle/10125/26194>.

⁴²This is not to say that such a means of teaching LEK to a child is wholly inapplicable or inappropriate, as it depends on the specific teaching/learning context.

⁴³In the course of my fieldwork, I have engaged in discussions with young adults on Pakin who reflect on their experiential learning of various kinds of LEK when they were children. In many cases, they learned through silent observation, and in other cases, there was direct verbal instruction from the elder. As in any ethnographic project, documentation of LEK requires empirical observation of LEK 'in action,' that is, observing the speech and actions of people as they go about their daily lives interacting with their environment.

⁴⁴I realize that for many speech communities, children no longer grow up in an environment immersed in overt socialization to LEK, or access to the environment itself. It is an empirical question, however, as to what kinds of LEK a child does have access to, and how that LEK—in whatever form, or however changed from the 'traditional' version—is realized discursively in daily life. A bottom-up descriptive approach is needed here, rather than any kind of top-down approach that assumes what children 'should' know by virtue of the situation in which they are raised or their linguistic/cultural/ethnic heritage (e.g., Hāwera et al. 2006 regarding a bottom-up approach to understanding Māori children's perspectives of their learning preferences for mathematics in contemporary contexts).

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Emerson Lopez Odango
odangoe@prel.org

Appendix: Transcription conventions following Du Bois 2006

.	final intonation contour
,	continuing intonation contour
?	appeal intonation contour
!	booster
:	lengthening
-	truncated word (note that this use of the hyphen is distinct from the hyphen that indicates morpheme boundaries, since the latter always occurs between morpheme, and the former at the end of truncated words)
—	truncated intonation unit
(n.n)	pause (greater than 0.2 seconds, number rounded to nearest tenth of a second)
..	micropause (0.15 seconds and less)
Λ	rise-fall pitch accent
X	one syllable of unclear speech
@	one pulse of laughter
[]	overlapping speech
[_{n n}]	disambiguation of overlapping speech (subscript numbers)
<ALLEGRO>	allegro quality (faster speech)
<F>	forte quality
<HI>	higher-pitched quality
<LENTO>	lento quality (slower speech)
<P>	piano quality
<VOX>	voice/accent of another
=	latching
(H)	audible inhalation
(Hx)	audible exhalation
(TSK)	click
(())	researcher's comment