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Language Documentation, Revitalization and Reclamation:

Supporting Young Learners and Their Communities

Child Language Research and Revitalization Working Group
Corresponding Author: Ruth Rouvier

Child Language Research and Revitalization Working Group:
Convenor: Ruth Rouvier, EDC (rrouvier@edc.org, rrouvier@berkeley.edu); *Organizing Committee*: Haley De Korne, George Ironstrack and Joanne Knapp-Philo; *Members*: Luiz Amaral, Alissa Baker-Oglesbee, Shobhana Chelliah, Jordyn Flaada, Mary Hermes, Tracy Hirata-Edds, Christopher Lalonde, Jacob Manatowa-Bailey, Barbra Meek, Susan Mosley-Howard, Richard Oster, Chris Sims, Joshua Sparrow, Jennifer Weston; *Research Apprentices*: Amy Avishay, Frederica Priyanto.

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Contents

1. Introduction 1
2. Endangered Language Documentation 3
3. Young Children: A Key Link to Sustaining Indigenous Languages 7
4. Linguistic Outcomes and Benefits of Language Revitalization for Young Children and Communities 11
5. Extralinguistic Outcomes and Benefits of Language Revitalization for Young Children and Communities 14
6. Next Steps: Methodological and Institutional Considerations 17
7. References 20

1. Introduction

Current research indicates that 46% of the world's 7,000 language communities are in danger of experiencing a complete break in language transmission by the end of this century (Wiecha, 2013). Communities are responding to this situation by accelerating their efforts to reclaim, revitalize, and re-learn their languages. Language reclamation, defined as a "larger effort by a community to claim its right to speak a language and to set associated goals in response to community needs and perspectives" (Leonard, 2012) and language revitalization, which has a primary focus on developing new speakers (Hinton, 2001), henceforth collectively referred to as (LR), are fast growing fields, with the involvement of members of Indigenous and minority language communities, theoretical and applied linguists, educators, government agencies, and many others. Although it has long been at the margins of academia, especially within mainstream linguistics, LR is incrementally assuming a more solid position within that discipline, especially among those linguists who are engaged in field linguistics and language documentation and description. Documentation of endangered languages can provide critical linguistic resources to efforts to support endangered language (re)learning in community and institutional contexts. Further, the act of documentation can impact language attitudes and heighten awareness of language endangerment within communities and in the broader society. While some reclamation efforts have benefited from the resources produced by documentary linguistics and other branches of linguistics, for many reclamation efforts existing linguistic resources are not relevant to their needs. Additionally, inappropriate academic interventions and discourses may have negative impacts on attitudes and awareness (Dobrin, Austin, & Nathan, 2009; Hill, 2002). To date there has been very little research focused on exactly how, why, and to what extent documentation can benefit LR efforts. The purposes of this white paper are to explore the impact of language documentation on LR, and to consider the linguistic and extralinguistic benefits of LR, especially as they impact young children. Through this overview of existing knowledge, we aim to lay a foundation for future research, which may illuminate and enhance the outcomes and benefits of language documentation and LR practice.

In order to foster better communication and collaboration among participants in language reclamation initiatives (LRI) and language documentation initiatives, this paper will discuss existing research and practice, and recommended next steps to support Indigenous communities' actions to maintain, restore, and reclaim their languages, with a focus on the youngest children. While we acknowledge that learners of all ages are potential beneficiaries of LR, in this paper we choose to focus on young children, including neonates, infants, toddlers, and preschool age children, for several reasons:

- Young children have a well-documented ability to develop receptive and productive capacities in multiple languages (e.g., Genesee, 2001)
- Exposure to language and culture influences young children's developing sense of self and community, serving as a protective factor for well-being in adolescence and adulthood (e.g., Chandler & Lalonde, 2008)

To support young children it is necessary to coordinate agendas and cross-disciplinary expertise, analyzing factors ranging from mental health to academic success and intergenerational communication. The contributions of linguists, language acquisition researchers, LR practitioners, public health

professionals, and education experts, among others, are critical to addressing these questions. A comprehensive research agenda is necessary to ensure that the interests of all stakeholders will be addressed, and that each discipline adapts and devises tools appropriate to the challenge at hand. Coordinated planning is also needed so that resulting analyses can be compiled to provide comprehensive information in formats and through channels that are accessible to all stakeholders.

One of the difficulties in developing the comprehensive and cross-disciplinary strategy outlined above is that there are few connections between even theoretical and applied linguistics (Cope & Penfield, 2011), let alone linguistics and public health. The social, intellectual, and institutional infrastructure that would facilitate this work is not in place. In order to address this challenge we convened a working group comprised of a diverse group of academics, professionals, and LR practitioners from a wide variety of disciplines who share a commitment to supporting Indigenous communities in their promotion of linguistic, individual and community well-being. Our initial findings and recommendations presented here were developed through a process of online and face-to-face conversations over the course of a year, centering around four thematic questions:

1) How do documentation methods and products support LR?
2) What are the unique opportunities and issues that arise with young learners in LR?
3) What are the linguistic outcomes and benefits of LR?
4) What are the extralinguistic outcomes and benefits of LR?

These questions structure the remainder of this paper. For each thematic question, we asked ourselves the following:

- **What do we know** about this topic? What is the state of research and practice?
- **What do we need to know**? What are the gaps and deficiencies in our knowledge that prevent us from advancing?
- **What can we do**? What steps can we take in our research and practice to increase our understanding, and improve our practices in language documentation and LR?
- **What methodological considerations** need to be addressed in order to optimize our work and ensure it is maximally impactful?

Although our experience is largely with Indigenous language communities of the Americas, especially North America, and our understanding of the issues and recommendations are influenced by that perspective, we believe this work has global implications and applications. We recognize that our work is just beginning, and we are committed to continuing and broadening our collaboration, both into the future and around the world. As we move forward, we anticipate many additions, adjustments, and refinements to the assessments and recommendations contained in this paper. We are also eager to add new voices and perspectives to this conversation. We hope you will join us.

2. Endangered Language Documentation

What do we know?

Current research and practices in language documentation

As a field, linguistics has long been involved in documentation of endangered languages. In the early Americanist tradition, when linguists and anthropologists made written and oral records of Indigenous languages, it was often with the explicit assumption that these languages would inevitably (and soon) disappear. Their documentation efforts frequently led to the production of a set of three scholarly products: a dictionary, a grammar and a set of texts of the language. These and other products were expressly intended and structured for the needs of an academic audience. The domains of language use documented by researchers were often quite limited, prioritizing literary and ceremonial registers and rarely containing interactional or everyday language use.

While this tradition of 'salvage' language documentation may have originally been intended solely to inform and advance the discipline of linguistics, over time language documentation has been understood as a key resource for combating the accelerating trend of language shift (Dobrin, Austin, & Nathan, 2009; Grenoble, 2009; see also: Mignolo, 2009). In part due to these changing expectations, language documentation methodologies began to change significantly in the 1980s (Amery, 2009; Hermes, 2012). There were a variety of forces that led to these changes. As communities were turning to language documentation in order to support LR, they demanded a more central role in determining documentation practices and products. More members of endangered language communities obtained training and advanced degrees in linguistics and related fields, often in order to support LR, and the dichotomy between 'researcher' and 'language informant' became increasingly problematized (Linn, 2014; Smith, 1999).

Language documentation as a field of study, rather than simply a means of collecting data, has gained legitimacy within linguistics, as evidenced by increasing attention within graduate programs, conferences, and publications. The kinds of language data collected through documentation has grown to include a greater variety of topics and domains of use. Technology has also allowed for extensive audio and video documentation, as well as better sharing of primary language data with both academic and community audiences. Ethical issues around research practices and the rise of participatory and collaborative research models throughout the academy have created opportunities for rethinking the methods and objectives of endangered language documentation and research (e.g., Rice, 2011; Stebbins, 2012; Yamada, 2007).

The extent to which documentation practices and products have changed as a result of these pressures is debated. However, the discourses around language documentation have shifted dramatically. There is now an expectation that language documentation should support, even if indirectly, community priorities for LR. Although documentation funders rarely directly support LR, they often ask applicants to discuss the ways their research will contribute to LR, and there is growing recognition that the quality of documentation products is enhanced through the interweaving of LR activities and documentary activities (Fitzgerald, 2017).

It is clear that language documentation can be helpful to LRI, in particular when accessible description and pedagogically-oriented materials are also produced (see Hinton, 2011; Hohepa, 2006). For instance, documentation of day-to-day conversation and child-centered language is valuable for communities that want to bring their language back into daily use in the home if intergenerational transmission is no longer occurring in all homes. A well-structured and presented grammar of a language can also help LR practitioners and assessors structure instructional activities and materials, and better observe what learners are being exposed to, and what they are and are not acquiring. Likewise, descriptions of sociolinguistic and pragmatic uses of the language can inform LR activities, aiming to ensure that all social domains and functions of the language are considered and that culturally-specific communication norms are respected.

Indeed, there are a growing number of examples of documentation providing critical linguistic resources to efforts to support endangered language (re)learning in community and institutional contexts , in particular, for ‘sleeping language’ communities where speakers are not available to model or transmit language directly (see for example, Hermes & King, in press; Leonard, 2008; Leonard, 2011). An example of the beneficial use of linguistic documentation comes from the reclamation and revitalization of Myaamia (Miami-Illinois). By the 1960s, there were no L1 speakers of Myaamia and the language was not used in communicative speech for the following thirty years. Community-centered revitalization began in the 1990s and required extensive use of documentation. The linguist David Costa processed over 200 years of documentation to conduct a synchronic and diachronic study of the language, reconstruct the grammar, produce print dictionaries, and publish a text of traditional stories. Most of these resources were published by the Miami Tribe of Oklahoma and utilized by community teachers, such as Daryl Baldwin, in teaching the Myaamia language in homes, tribal programs, and college classrooms. Community will to use their language again joined together with the extensive language documentation record has made the entire Myaamia effort possible. Today, hundreds of people use the Myaamia language on a daily basis and a small group of learners is capable of recounting traditional stories in Myaamia. Supporting LR initiatives is thus an interdisciplinary endeavor in which the knowledge provided by documentation can play an important role (Baldwin & Costa, in press).

Aside from the products of language documentation, the act of documentation itself can impact language attitudes and heighten awareness of language endangerment within communities and in the broader society. The presence of language researchers within a community, and the interactions they have with members of that community can focus attention on the precarious status of the language. This in turn may encourage individuals or communities to take steps to support the language. Scholarly interest in the language may elevate its status in the eyes of speakers, learners, and educators, and facilitate language use in schools and other domains that are often associated with a dominant language.

However, documentation can also carry risks to language communities (Hill, 2002). When a language documentation project is seen as having high prestige or more resources than community-based LR efforts, it can drain attention, support and resources (such as the time of language speakers and learners) from LR. In addition, the needs and interests of LR practitioners may not be compatible with those of academic researchers, creating tension over how to structure and prioritize documentation

activities and products, and resulting in the development of language products that are of limited use to LR (Moore, Pietikainen & Blommaert, 2010).

What do we need to know?

Gaps and deficiencies in language documentation research

Especially in situations of severe endangerment where there are only a handful of elderly first-language speakers, communities may be reliant on documentation of their languages to promote language learning. However, documentary linguists often have little guidance on how to structure their research activities and products to ensure they will be of use to the communities with which they work (e.g., Speas, 2009). Documentation may not address the key domains and communicative functions of interest to LR communities; the focus is often on rare structures and elicited utterances, rather than everyday communication practices in a range of social spheres (Hermes & Engman, in press). Additionally, there is a need to document the acquisition of endangered languages by young children in order to understand the unique nature of language development in these learning contexts. Documentation of this type could also provide a rich source of data to better understand linguistic and social change within language endangerment scenarios.

Documentary and descriptive linguists, especially those working in close collaboration with endangered language communities, are in need of guidance and training in the preparation of appropriate and useful materials in support of teaching and learning goals , especially for use with young children. Development of pedagogical grammars and other materials based on documentation is often undertaken by individuals with no training for these tasks. Additionally, the goals of a specific LRI may not be explicitly articulated, may not have been shared with documentary linguists, and/or may evolve over time, further complicating the efforts to support these goals (see Simpson & Wigglesworth, 2008; Wigglesworth, Simpson, & Vaughan, in press).

Guidelines for linguists, improved communication with LR practitioners, as well as assistance for LRI participants in identifying goals which documentary linguists could help to achieve, could bridge the gap between these stakeholders and improve the impacts of both.

Addressing these questions is critical to improving practices within the field of documentary linguistics, advancing theories of language change and language acquisition, and ensuring the maximum benefit of language documentation research to the field of linguistics and to language learners and their communities.

What can we do?

Research recommendations: New directions in language documentation

Language documentation has traditionally been focused on collecting the data necessary to create a description of the structure of that language. As mentioned above, at its narrowest, this included a lexicon and grammar of the language, and generally some texts, which exemplified both. Recent trends have broadened the scope of language documentation to include increased interactional language use, gestural components of spoken languages, contextually-driven usage, and sociolinguistics. While these

expansions are necessary and welcome, they do not go far enough, and future research should address additional areas of significance in language endangerment contexts, highlighted below.

- *Child and adult language development in endangerment/LR contexts*

Very little is known about how language learning and language development progress in endangerment and LR contexts. As discussed below in section 4, research on politically dominant and typologically similar languages is not likely to reflect the realities in these contexts. For both children and adult learners, the input received and the extralinguistic factors influencing language development are certain to differ significantly in Indigenous contexts, and must be understood in order to design effective LR pedagogies and strategies. In order to re-establish intergenerational language use as a primary means of language maintenance, it is also critical to understand child-directed language practices in these contexts.

- *Multilingualism, language endangerment and shift*

Much of linguistic theory and research has assumed a fundamental or 'ideal' state of monolingualism, despite the fact that multilingualism is common around the world, and pervasive in contexts of language shift (De Korne, in press). Although this assumption is less pervasive than it once was, language documentation still tends to follow a monolingual, or at least an 'unbalanced bilingual' research model. Researchers rarely attempt to document the total language repertoire of a speaker or of a community, instead focusing on a single 'target' language that they consider the speaker's first and dominant language. Understanding and theorizing language endangerment is impossible without understanding how both stable and shifting multilingualism function in these communities.

- *LR activities*

Language documentation has a strong bias towards the speech of 'fluent first language speakers' whose language is imagined to be minimally different from that of the idealized 'traditional' form of the language. This bias often precludes research with speakers and learners whose language differs in small or significant ways from that of earlier generations. It also prioritizes research in non-LR contexts in order to minimize the presence of people who are not considered 'fluent first language speakers'. This bias is theoretically and practically problematic, as the concepts of 'fluency' and 'first language speaker' are widely debated (Pennycook, 2001; Suslak, 2009). The promulgation of attitudes about language purity and legitimacy as a result of language documentation can have profound negative consequences for language use and LR practices within communities (Dorian, 1994; Whaley, 2011). This bias also influences researchers to ignore the important knowledge that can be gained from researching how linguistic repertoires and practices are affected by endangerment and revitalization contexts.

Expanding the range of language documentation research is critical both in order to effectively support LR, but also to better understand language as it exists in Indigenous/endangerment contexts (e.g., Meek, 2010). Rigorous, multidisciplinary, and collaborative research on language use, as well as structure, will inform questions about language learning and lead to a richer and more balanced theory of linguistics.

Research on documentary linguistics practices and methods
In order to ensure that language documentation is maximally useful to both the field of linguistics and to LR, it is critical to not only expand the scope of language documentation, but also to conceive of methods and practices of language documentation itself as objects of study.

- *Documentation practices*

Documentation is both a scientific methodology and a social practice (Bucholtz, 2007). Both of these aspects of documentation need to be studied in order to better understand how they impact the creation of knowledge, LR practices, and communities. This is especially true in relation to young learners as so little is known.

- *Usefulness of language documentation products for revitalization*

It is imperative to study the ways that the products of language documentation – both primary data and materials produced from those – are being used, and to what effect, in LR. This research must consider aspects of the language most endangered and/or most valued by the community, the language-related goals of the community, and what opportunities and pressures the community is facing regarding the language. These contextual factors can determine which kinds of support, teaching and learning guidance, and materials are most useful.

3. Young Children: A Key Link to Sustaining Indigenous Languages

What do we know?

Young children's remarkable capacity for language development
Infants and young children are superior language learners when compared to adults, in spite of adults' cognitive superiority. In the first year of life, the human ability for learning languages features a heightened capacity for recognition, discrimination, and sorting of the phonemes of all languages (Vihman, 2014). Language is considered by many to be one of the classic examples of a ''critical'' or ''sensitive'' period in neurobiology (Bruer, 2008; Hauser, Newport & Aslin, 2001; Johnson & Newport, 1989; Knudsen, 2004; Kuhl, Conboy, Padden, Nelson, & Pruitt, 2004), although others argue that the evidence for a biologically-determined critical period is inconclusive (Hoff, 2009). Regardless, infants do begin life with brain systems that allow them to acquire any language(s) to which they are exposed, and can acquire language as either an auditory-vocal or a visual-manual code, on roughly the same timetable (Petitto & Marentette, 1991).

Not all aspects of language development occur simultaneously. Though there is not yet agreement on the precise timing, we know that the developmental stages for learning phonetic, lexical, and syntactic levels of language vary. Studies indicate, for example, that while phonetic learning occurs prior to the end of the first year, syntactic learning flourishes between 18 and 36 months of age. Vocabulary development ''explodes'' at 18 months of age, but does not appear to be as restricted by age as other aspects of language learning. And although there is still much to be learned about the process of how language learning occurs, the best evidence to date indicates that it is a social, interactive process (Kuhl, 2010; see also: Ochs & Schieffelin, 1995).

Bilingual language development

Early exposure to language(s), even before children begin to babble, provides important and long-lasting language knowledge. The transition from an early universal ability to perceive and distinguish all the phonemic units possible in human languages to a more language-specific pattern of perception occurs very early in development, between 6 and 12 months of age (Werker & Tees, 1984). Infants' perception of nonnative distinctions declines during the second half of the first year of life (Best & McRoberts, 2003; Rivera-Gaxiola, Klarman, Garcia-Sierra, & Kuhl, 2005; Tsao, Freiwalk, Tootell, & Livingstone, 2006; Werker & Tees, 1984). At the same time that perception of non-native phonemes declines, native language speech perception shows a significant increase (Kuhl et al., 2006). There is also evidence that although immersive language exposure is optimal for language learning at any age, infants between 6 and 12 months who have even limited exposure to a second language can nonetheless learn to discriminate phonemes from the new language. In fact, this learning persists at least for several months even without additional exposure (Kuhl, 2010).

Many cognitive advantages of bilingualism in young children have also been identified. For example, White and Greenfield (2017) found that Spanish-English bilingual children outperformed monolingual English children on tasks involving executive function. These results suggest that Spanish and English-speaking Latino preschoolers from low-income backgrounds demonstrate advantages in executive function, compared to their monolingual peers. Zelasko and Antunez (2000) found that the brains of bilingual individuals are very active and flexible and that they understand math concepts and solve word problems more easily than monolinguals. Bialystok (2001) found that bilingual children were stronger than monolingual peers in focusing, remembering, and decision-making. Overall, young children who develop balanced bilingual skills in their preschool years have often been found to excel in the linguistic, cognitive and social-emotional areas (Castro & Espinosa, 2014).

Physiological and social emotional advantages have also been identified in bilinguals. Kovács and Mehler (2009) found that children raised in bilingual homes showed better self-control and are better at ignoring irrelevant information. Dreifus (2011) found that bilingualism may delay the onset of Alzheimer's disease in older adults. It is suspected that this is due to the protective effects of bilingualism's mental workout, which is the continuous cognitive effort required to suppress one language while speaking the other. There is also new research suggesting that even monolingual infants and young children who are regularly exposed to more than one language have improved social and communication skills, and are better able to take others' perspectives (Fan et al., 2015).

Given this increasing body of evidence regarding the cognitive benefits of bilingualism, it is important to provide young children with opportunities to develop their language skills (in all their languages) at the time when they can best master them. The amount and quality of exposure to the target language have to be considered if the goal is to support young language learners in developing their linguistic abilities. Concomitantly, parents also need to be informed about the benefits of early bilingualism, to counter mistaken notions that Indigenous language learning is detrimental to or delays the acquisition of English and interferes with success in schools. Capitalizing on opportunities to expose children to these languages makes a compelling case for focused language efforts aimed at young children, their parents and their families.

Language and culture play a key role in young children's developing sense of self and community
Children construct their understanding of cultural ways, the values, beliefs and world perspectives shared among members of a culture through their interactions with language speakers from family and community. Maintaining and developing relationships among families and the cultural community through a shared common language contributes to those essential intra-community links, which help develop cultural identity and a sense of rootedness to one's kin as well as a sense of place (Feld & Basso, 1996). For children born into Indigenous cultures with rich cultural lifeways, traditions, beliefs and practices, the extent to which they are able to maintain these aspects of their culture clearly depends on how and to what extent they are exposed to them as part of their early learning experiences and supported in this learning as they continue throughout their formative years. It is therefore just as critical to recognize that the early "messaging" young children absorb from their surroundings, experiences, and interactions with adults and their peers about the prestige of language can make a major difference as to whether children and their families are able to maintain and sustain ties to culture and community (Wong Fillmore, 1991).

Language gives meaning to cultural practices and traditions. For Native American children, these deep connections to culture form the essential underpinnings and foundations that can help prepare them to become contributing members of their communities. During their formative years, children eventually learn their place and role in their families and community, with much of this conveyed through observation of others and in varied sociocultural contexts in which language is heard and used. The norms associated with these roles also influence how children use, or do not use, language (Meek, 2007). This socialization process in which a culture teaches its young is an essential element of language and cultural continuity and survival.

As well, many researchers posit that the role of families is critical in supporting acquisition of the home language and culture. Family engagement practices where culture and language are integrally linked provide the strongest connections between children, their parents and members of their cultural group. Yet rarely are the cultural strengths of children recognized as an important aspect of early childhood programs. Cultural strengths include personal and cultural beliefs, values and cultural knowledge of a people, its spirituality, creativity, and technologies (Little Bear, 2000). Children must be able to see these reflected in early childhood programs they participate in, if they are to continue to maintain what their families and communities hold dear as their cultural patrimony.

Language is a key part in the early development of a young human being and is inextricably associated with the myriad ways of behaving and being that young children learn in their earliest years. These aspects of language pragmatics include: how to act, what to say and do, when to speak and do something, how to show respect, how to behave in specific settings and/or with different adults and with peers, how to eat, when and to whom to speak, etc.

There is some research suggesting that the way people think about and view the world can be influenced by and through their language experience (Anderson & Lightfoot, 2002; Crystal, 1987; Hayes, Ornstein, & Gage, 1987), though this is subject to vigorous debate and ongoing study (Bowerman, 1989; Ferry, Hespos, & Waxman, 2010; Gilbert, Regier, Kay, & Ivry, 2006; Hespos & Spelke, 2004). Language

pragmatics can also be shaped by cultural differences. For example, in U.S. culture, where independent learning is valued, new skills are often taught and learned through verbal instruction (Slobin, 1979). On the other hand, in more cooperative cultures, including Native American ones, people frequently learn new skills through nonverbal observation (McLeod, 1994). This "non-verbal communication" is a key part of the cultural transmission of information and should be recognized as a key area of learning for young children (ibid). McLeod also noted the fact that independent learning and cooperative learning vary by culture. Because language is a key conduit for transmitting culture, it is critical that young children have access to their heritage language(s) so they can grow in their culture as well as mainstream culture.

What do we need to know?

Little is known about whether exposure to Indigenous languages confer different benefits or different degrees of those benefits that have been shown from study of politically dominant languages. We might assume that the salient, specific benefits for young children of early Indigenous language learning are based in part on:

a) the specific epistemological schema, knowledge, conventions, and beliefs that are transmitted – explicitly or implicitly – through that language, and
b) the ways in which learning, listening to, and speaking the Indigenous language creates and strengthens specific connections to family and community members, historic legacies, cultural identities, and envisioned futures.

It also seems important to consider whether early Indigenous language learning may present benefits not only at the level of the individual who is learning as a young child, but also at the level of family and community members, in the areas of communication, relationships, social cohesion, collective cultural identity, and perhaps other dimensions, including possible protection from the corrosive effects of globalized commercial and corporate pseudo-cultures. In addition, the research on children of immigrants, and the effects of heritage language learning on the various levels listed above, should be consulted to identify additional research questions to be considered, while keeping in mind the considerable differences between these language-learning contexts.

What can we do?

Research recommendations

Given the urgency of Indigenous language endangerment and the diversity of endangered language settings, practice-based research is needed which responds to context-specific concerns. For example, although we know that human infants under 12 months of age have a unique capacity for and approach to learning languages and that early language learning requires social interaction, we do not know how best to apply that knowledge in specific community contexts where infants at these ages do not have sufficient exposure to and interaction with speakers of the target language. We need further research on early bilingualism and dual language learning in the context of language endangerment. As well, we need to know what factors contribute to language maintenance in Indigenous communities where child generations are in fact still learning the mother tongue before they enter formal schooling.

We recommend the following research priorities:

- Multi-year studies in a wide-range of communities that engage elders and other speakers of Indigenous languages, along with the families of young children and 0–5 child care and preschool providers (or the equivalent). These studies should attempt to support family and caregivers who interact with young children to build further competencies in their languages, and to develop meta-linguistic competencies in culturally-appropriate adult-child language practices, so that they can implement full-immersion early care and education experiences for their youngest children.
- Develop a more robust research-funding base for studies that examine the complexities and developmental contexts of young children acquiring and learning Indigenous languages as second languages to inform these communities about the potential benefits and social strengths associated with the development of early bilingualism.
- Review what is currently being done with language for 0–5-year-olds in a broad sample of Indigenous communities. Identify what is working and what challenges have been overcome, as well as any barriers to progress. Examine factors that lead to language maintenance in communities where child generations are still learning and speaking the Indigenous mother tongue.
- Work with appropriate agencies to fund opportunities for higher education institutions (such as tribal colleges in the U.S.) to develop a series of LR courses that train (and award academic credit to) early childhood educators. Include intensive language courses, as well as courses in child language development in LR contexts, LR pedagogy, etc.

4. Linguistic Outcomes and Benefits of Language Revitalization for Young Children and Communities

What do we know?

Quality and quantity of communicational input is key

For all young language learners, input or exposure to language use is the foundation of developing linguistic and communicative abilities. Input should include language use in authentic contexts of daily communication, and should offer opportunities for learners to produce and use language (Baker, 2001; Krashen, 1982). Additionally, the communication and interaction styles that are unique to each cultural community may be transmitted to young learners through exposure to authentic, contextualized language use (Ochs & Schieffelin, 1984). Often one of the greatest challenges of LR settings is limited input, which caregivers and teachers can try to address through maximizing their own use of the language, and providing other sources of input such as multimedia materials (Hermes, Bang, & Marin, 2012; Hinton, 2013).

Language learners and multilinguals have often been viewed through a deficit lens by both researchers and practitioners, and not given adequate development support (Cummins, 2000; Heller, 2007). In other words, the language abilities of learners and multilinguals are judged negatively and compared to idealized speech of monolingual native speakers, while the depth and breadth of their communicative

repertoires is ignored (García, 2009; Rymes, 2014). This deficit view is reflected in popular discourses in society and has been taken up by some education actors such as teachers and policy makers, who contribute to the negative perception of language learners (McCarty, 2003; Ruiz, 1984). In addition to ensuring rich communicational input for learners in LR contexts, we need to reverse this deficit lens (Hirata-Edds & Peter, 2016) and pay attention to what learning and use is occurring and how.

What do we need to know?

What learning is occurring in LR contexts? What input are young children receiving? How can this input be maximized and output encouraged?

Research on language development – first, second or additional language – has focused almost exclusively on standardized, politically-dominant languages, and often with little attention to multilingual influences (Kachru, 1994). Learners in LR contexts, in particular, have been largely under-studied by linguistic researchers, both those working in language documentation and those in second language acquisition (Cope & Penfield, 2011). The development sequences and timelines that have been observed in studies of the acquisition of standard, national languages may not be appropriate references for young children in LR contexts. Researchers and educators need to turn their gaze to the context-specific needs and learning trajectories of children participating in LR in order to document the nature of input being received, how development is occurring, and ultimately how to enhance and support the learning process. In order to achieve this, LR researchers face challenges which include building long-term relationships with LR participants, developing and piloting language-appropriate research instruments (e.g., tasks, assessments, and observation protocols), and adjusting research models to work with small sample sizes, among other methodological and logistical concerns.

What can we do?

There are numerous strategies and opportunities for understanding and maximizing input in LR contexts. Here we highlight strategies and opportunities that may be explored by LR practitioners and families, as well as by researchers.

Who: Who is providing input to children and how? What social norms and attitudes shape interaction and input? What peer-peer interaction occurs?

Participants in LR, their relationships to each other and the social roles that they take, constitute the communicational framework within which children learn and speak. Researchers and practitioners must consider who participates in the LR community of practice (Weinberg & De Korne, 2015), what positive and negative influences these participants may have on young learners (Meek, 2010), and how to bring speakers and young learners into regular interactions. While interaction with caregivers and teachers has been examined in some contexts (Eriks-Brophy & Crago, 1994; Philips, 1972; Romero-Little et al., 2007), greater attention is needed with respect to the transmission practices that are occurring (or not occurring) in many contexts. Peer interaction is also a crucial area that is in need of greater attention, as peers have been found to impact the development of children's speech practices (Swain, Brooks, & Tocalli-Beller, 2002).

When: What are the patterns of emerging language practices among young LR learners? How does comprehension and production develop in LR contexts?

Languages, like other human capacities, are learned over time and through extensive repetition. Stages of language development have been identified for some national languages such as English as a first language (Brown, 1973), English for Spanish and Chinese speakers (Dulay & Burt, 1974), and crosslinguistic studies (Slobin, 1985–1997), but very little information exists on the development of lesser-studied languages that are the focus of LR initiatives. In documentation of such languages as Inuktitut (see Crago & Allen, 1998, 2001, and more for example studies), Mohawk (Mithun, 1989; Feurer, 1980), and Cherokee (see Peter & Hirata-Edds, 2006, 2009, and more for examples) researchers note characteristics of acquisition and learning. These languages are both distinct in terms of linguistic structure, and in terms of the conditions under which they are transmitted, making the benchmarks of dominant languages potentially inadequate reference points for the linguistic development of LR learners. Young learners in LR contexts are typically exposed to multiple languages to different degrees and in different social domains, and thus the development of their multilingual repertoire is another factor in need of consideration. Multilingualism has been found to have cognitive and school achievement benefits for learners if sustained over time (Bamford & Mizokawa, 1991; Bialystok, 2010; Thomas & Collier, 1997); it is thus important to examine the outcomes and benefits of LR initiatives longitudinally, and to avoid the use of inappropriate benchmarks borrowed from studies of dominant languages.

Where: Where is input occurring and how does it vary across social domains within LR contexts?

Languages are learned in social contexts, especially those that occur frequently, such as interactions in the home or in school. Thus, the use of a language across social domains is helpful in supporting LR initiatives (Fishman, 1991). Learners may be exposed to an endangered language in some social domains and not in others, which subsequently influences outcomes of their language acquisition. Examining the many influences that are present in a LR context can help researchers and practitioners understand the context-specific language ecology within which they operate, and strategize how best to intervene in that ecology (Haugen, 1972; Hornberger, 2002).

How: Through what channels are children receiving input? What is the nature of uptake in response to this input? What are the outcomes of different teaching strategies in LR contexts?

Language input is filtered through the interactional dynamics and materials that are present in the learner’s environment. In home settings, learners are typically exposed to the rich and varied input that they need in order to acquire a full range of expression, from questions and commands to description and evaluation. In endangered language settings, however, language use may be limited to certain domains or certain communicative functions, which will in turn limit the communicative abilities that learners acquire. In all settings, attention is needed to ensure that learners are invited to participate in meaningful language use, going beyond the nouns and short phrases that are often the focus of early learning activities. The input received in classrooms is often more structured than input in home and community settings, and should be intentionally tailored to drive language development, with attention to both the forms and functions that learners need to acquire. Additionally, language can be conveyed through a variety of formats, including orally, visually, and through multimodal media platforms that

play an increasing presence in young children's lives. Many LR initiatives have made use of technologies to engage learners (Eisenlohr, 2004). Further research is needed to explore how different forms of input may support or enhance the development of young learners' language skills; in particular, to what degree they incorporate this input into their growing receptive repertoire and eventual production. Extensive research on language learning in classrooms has been conducted in dominant language settings (Ellis & Barkhuizen, 2005; Mackey & Gass, 2005), while the research on pedagogical approaches to teaching endangered and heritage languages remains limited (King, 2016; Valdés, 2005). Research opportunities concerning input are broad, including teaching strategies, lesson design, and materials as potential areas of import.

What: What are the qualities & properties of the language input available to children? How does bilingual acquisition occur in LR contexts?

Language acquisition research has given a great deal of attention to the forms of language that children hear and/or produce, both in and out of classrooms. Scholars have examined how frequently learners are exposed to certain language forms and the ages at which different forms are produced. Similar form-focused studies in LR contexts could help to document and describe child-directed speech and child speech production with peers and adults, and to inform LR initiatives. If children are not exposed to certain kinds of language, there will likely be gaps in their acquisition and eventual communicative capacities. Attending to what kind of language they are exposed to can help teachers and caregivers address these gaps. Additionally, children in LR contexts are exposed to at least two languages. Contrastive analyses of the similarities and differences between the languages that they are acquiring and attention to the development of their bilingual capacities could help to ensure that LR education provides full support for bilingualism and eventual biliteracy.

5. Extralinguistic Outcomes and Benefits of Language Revitalization for Young Children and Communities

What do we know?

Perhaps the most important element of a people's ability to be healthy and whole is for the group to be able to imagine a healthy future for their community as defined by their community's norms. Anecdotally, researchers and Indigenous scholars report that when describing a positive future for their community, Indigenous people in North America regularly include a healthy use of their heritage language as a foundational element. Many of these communities connect their collective wellbeing with the desire that they continue to speak, or begin to speak again, their heritage language. Indigenous and non-Indigenous scholars have identified positive correlations between language, culture, and communal health ideally through collaborative and respectful partnerships. There are a few exemplary studies conducted by fully invested and collaborative partners who have jointly created strengths-based research models that include variables that have intra- and extra-communal value in the agreed upon system of observation.

Globally, Indigenous people are marked by a series of well-documented negative health disparities which include, but are not limited to, higher levels of infant mortality, maternal mortality, obesity,

diabetes, hypertension, cardiovascular disease, chronic renal disease, infectious diseases, alcoholism, drug abuse, and in general a lower life expectancy (Gracey & King, 2009). Despite all the gains made in public health over the last century, a significant gap in life expectancy continues to endure between that of Indigenous peoples and settler societies. If the prevailing patterns continue, it seems that this gap is unlikely to narrow in the future.

In a similar vein, the health of Indigenous people around the world is impacted by dramatic disparities in income, education, employment, living conditions, social support, and healthcare access. Addressing these determinants presents one of the greatest opportunities to effect meaningful change on the life expectancy gap experienced by Indigenous peoples.

Indigenous scholars and community members, together with outside scholars with whom these communities have a high level of trust, have increasingly begun to ask themselves questions about the social determinants of their community's wellbeing. For most Indigenous peoples, these negative individual and communal social determinants of health are the product of their shared experience with colonization, colonial domination, and cultural destruction. Recent research is beginning to reflect the negative and intergenerational health impacts of colonization. For instance, boarding school attendance has been associated with an increased odds of alcohol dependence (Koss et al., 2003), and racial discrimination has been associated with increased post-traumatic stress disorder incidence and substance misuse (Currie, Wild, Schopflocher, & Laing, 2015).

While the deleterious impact of discrimination and colonization has emerged in the literature, so has evidence about the protective, mitigating or buffering effect of Indigenous and community support, cultural knowledge and pride, spiritual coping and healing practices (Harris-Britt, Valrie, Kurtz-Costes, & Rowley, 2007; LaFromboise, Hoyt, Oliver, & Whitbeck, 2006; Walters & Simoni, 2002). This line of research highlights the strengths that Indigenous communities possess. By grappling with both sides of this empirical coin, one is able to address the all-important questions about how cultural practices, including current and historical knowledge, traditions, kinship, and the critical element of language, can be employed to facilitate the strengthening of Indigenous communities.

Research also indicates that knowledge of heritage language and culture is correlated with academic success and retention (Hunt, LaLonde, & Rondeau, 2010; Mosley-Howard, Baldwin, Ironstack, Rousmaniere, & Burke, 2016; Thomas & Collier, 1997). While the Mosley-Howard et al.'s work does not focus on early learners, it does add to the growing literature on the impact of cultural knowledge acquisition on academic attainment, language acquisition and identity. In this study, a sample of Myaamia Nation college students reported a strengthening of Myaamia identity and demonstrated higher levels of college degree attainment with the introduction of courses centered on their cultural knowledge system taught by Myaamia instructors. This study was part of an ongoing collaborative development that continues to include tribal scholars, trusted non-tribal scholars, tribal leaders, and involves regular presentations to the general tribal public in addition to seeking publication in academic journals. The system of monitoring for this study continues to be a joint development that relies heavily on the Miami Tribe's epistemology, system of values, and uses the tribe's heritage language in the development of research models and reports.

In the United States, although there exists wide cultural variation across the 567 federally recognized tribal nations and many unrecognized tribal nations (U.S. Department of the Interior, 2016), there is general coherence around the importance of respect for one's self, one's community, and the Earth (Cajete, 2000). It has been observed that as participants progress through language or cultural revitalization, they often develop an enhanced sense of tribal identity that is protective in aspects of health and wellbeing (Gone, 2007). Although as of yet unexplored, it is probable that participation in language and cultural revitalization shifts epistemological perspectives, making interrelationships within a community more salient and changes in perspective and behaviors possible.

What do we need to know?

Several key questions can be posed to launch this conversation: What impact does learning one's heritage language have on one's individual well-being? What impact does having a healthy number of 0–5-year-olds learning the community's language have on the community's overall well-being? These questions begin to get at the extralinguistic outcomes of learning a heritage language within an Indigenous community.

One of the challenges facing community leaders and outside scholars is that much of the research regarding LR among 0–5-year-olds focuses almost solely on the linguistic outcomes of learning a heritage language, with less attention paid to the outcomes that these learners experience continuing vital aspects of the respective Indigenous culture and lifeways. While there has been little work completed with the target age group on this issue, there are examples of collaborative work that assesses the correlations between language health and communal health within Indigenous populations. Key studies carried out by Chandler and Lalonde (1998 and 2003) and Oster, Grier, Lightning, Mayan, and Toth (2014) indicate that cultural continuity broadly, and language health specifically, are correlated with lower levels of suicide and diabetes. On an individual level, reconnection with and revitalization of traditional culture has been shown to have positive mental health impacts (Janelle, Laliberte, & Ottawa, 2009; Kirmayer, Boothroyd, Tanner, Adelson, & Robinson, 2000; McCormick, 2009; Snowshoe, Crooks, Tremblay, Craig, & Hinson, 2015; Spence, Wells, Graham, & George, 2016). These studies demonstrate that there is untapped potential in improving health within Indigenous communities by engaging through listening to what communities have to say about their health, shifting away from deficit models, and together with community partners creating strength-based models that examine community health as defined by the community. Most Indigenous communities are already taking whatever steps they can to revitalize their culture and language, and these studies seem to indicate that language and culture revitalization have both an ameliorative and preventive impact on negative health factors for Indigenous communities.

What can we do?

There is a small and growing body of research into the relationships between language and culture continuity and the positive impacts on individual and communal Indigenous health, but there is an intense need for more research in this developing field of study (Whalen, Moss, & Baldwin, 2016). In addition, there is a need for carefully constructed collaborative research that focuses on the youngest

members of Indigenous communities. Future collaborative efforts are needed to thoroughly examine 0–5-year-olds in the context of their families and communities, and observation of these networks needs to occur within a system of monitoring social and linguistic health as defined by community partners. Linguistic health should not be defined solely by levels of so-called fluency, but should include intra-communal standards of identifying and assessing linguistic health. It is possible to retain consideration of indicators that the scientific community cares deeply about, while designing studies based on direction from the Indigenous communities at the center of each study. Successful studies that use this model look to communities to supply the variables that structure the studies.

In addition to the obvious gap in subject age in the aforementioned studies, most of the current work struggles to take into account the diaspora that defines most Indigenous nations and communities in North America today. Because of their shared history of colonization, land loss, and relocation, most Indigenous communities have significant percentages, sometimes significant majorities, of their populations living off reserve, reservation, or out of their service area depending on the group's legal status. Studies that only examine the home community on reserve or reservation run the risk of over-generalizing about each unique Indigenous population.

Most Indigenous people have experienced that language is inextricably bound up with culture: embodying, expressing, and symbolizing cultural realities (Kramsch, 1998). The importance of language is heightened within cultures of oral tradition, where language often enjoins the sacred to actualize endangered ceremonies and identities (Kroskrity, 2012). Accordingly, language revitalization is better realized as a component of broader cultural revitalization rather than compartmentalized language curriculum. This insight parallels the experience of the interweaving between physical and social determinants of communal health. Just as Indigenous scholars and community practitioners have recommended re-centering Indigenous epistemological frameworks to integrate language and cultural revitalization, scholars of Indigenous community health are recommending that we design research studies to examine the integration of language and cultural health into our understanding and study of Indigenous health writ large (Hermes, 2005; Hermes, Bang, & Marin, 2012; Reyhner, 2010; Whalen, 2016).

6. Next Steps: Methodological and Institutional Considerations

Implementing the recommendations described throughout this white paper will entail a significant reorientation within and between the institutions that support and guide language documentation and LR research and practice. Academic disciplines and departments, agencies that fund linguistics research and LRI, professional societies, public agencies that work with and influence policy and priorities for endangered language communities and for academic research, ethics review boards, and many others will play key roles in supporting and facilitating their implementation. This research needs to be normalized, understood, valued, and supported. Funders need to consider LR as a research-worthy topic; academia, in particular linguistics, needs to value documentation and revitalization research as intellectually legitimate; and we must build institutional and disciplinary guidance and support for these research priorities.

Two overarching themes emerged in our conversations, and must be emphasized here and prioritized in future work. First, we must adapt documentation and LR approaches to be much more community-based and derived, so that communities are involved partners and the work benefits them. When LR practitioners and communities participate in all stages of project planning and implementation, results are much more likely to be relevant and immediately applicable to their own needs. In addition, there is a critical need for novel interdisciplinary collaborations between linguists and health researchers, policy makers and others.

Valuing, Supporting, and Promoting Language Documentation and LR

Researchers working, or wanting to work, on these issues often face significant institutional barriers. Language documentation has only recently gained legitimacy as a field of study that is both worthy of funding, and carries merit for academic advancement. Language revitalization and the kinds of research priorities outlined above still face significant skepticism within linguistics, which generally views them as elements of 'service', and are often completely overlooked in other disciplines.

There is a need for different kinds of training for researchers involved in endangered language documentation and LR. In many cases, although scholars are eager to adopt these recommendations, they lack financial or academic support, mentorship or advice on how to proceed. For example, most language documentarians – and in fact, most linguists – do not work with children, in part because of the challenges of securing ethical approval for research protocols involving minors. This problem is further exacerbated by the existing complications for ethical approval in many endangered language communities regarding anonymity, privacy and consent, and the fact that the parents of young children may in fact be minors themselves. Existing research methodologies for child language acquisition research are largely based on institutional (school, childcare) or laboratory settings in developed countries, and must be significantly adapted if they are to function within typical language documentation field settings and research programs.

There are numerous methodological approaches that can be used to explore these issues separately or in combination, and which are best implemented with the participation of the multiple stakeholders in LR efforts. A variety of research designs, including qualitative, quantitative, natural observational, and mixed methods approaches to language study have potential to further our understanding of language learning in LR contexts. Research in more commonly studied languages can provide methodological models (e.g., Menn & Bernstein Ratner, 2000); however, it is important to also develop culturally appropriate and linguistically informative study designs that may draw from ethnographic observation, action research, quasi-experimental case studies, surveys, recording, psycholinguistic methods, and a host of other possibilities. This also includes and emphasizes respectful and inclusive collaborations of interdisciplinary teams.

In order to achieve greater understanding of LR practices and outcomes, we must have appropriate and sustained funding mechanisms to support needed research. LR is a highly collaborative, complicated, and long-term endeavor, and research must likewise be multifaceted, flexible, and longitudinal. Funding of LR efforts, and related research, should be for a sustained period (at least 5+ years), and should be

balanced between a variety of language endangerment and LR communities and contexts. In addition, it is important that public agencies and funders collaborate and coordinate their policies and resources in order to maximize support for language efforts that focus on young children. For example, in the U.S. we must create linkages between state and federal education agencies, funding agencies and Native-led training centers based in universities or colleges of education with Native expertise and proven experience working with tribes and early childhood education to provide training to early childhood educators, Native language teachers, tribes and communities about Native language maintenance and revitalization issues.

Enhancing Collaboration, Data Sharing and Connecting Research to Practice

As this work progresses, steps need to be taken to facilitate thriving communities sharing what they have learned with those who have been less successful or are currently struggling. For example, funding agencies should identify and link appropriate Indigenous-based training resources with established and newly funded LRI to provide collaborative support and ongoing training opportunities for language teachers, program administrators and families. Although some Indigenous communities do not have their own experts in the health fields or language and culture revitalization, all communities have an interest in being healthy, as they define it. In some cases, Indigenous communities are more apt to listen and act when information comes from another Indigenous community with a similar historical experience, and who is also willing to listen. Non-Indigenous community-engaged scholars can be allies in this conversation through using the traditional academic frameworks to facilitate intra-Indigenous conversations. Protocols within the field of linguistics for engaging in collaborative, interdisciplinary language research and documentation with Indigenous communities are lacking. Development and discipline-wide adoption of protocols will benefit not only new and established scholars but also the communities where they conduct research, and result in higher-quality research outputs. These protocols should be created with input from academic and community partners, and draw on protocols and methodologies from other disciplines as well as the emerging literature on this topic within linguistics (Bowern & Warner 2015; Crippen & Robinson, 2013; Dobrin, 2005; Leonard & Haynes, 2010; Rice, 2011; Robinson & Crippen, 2015).

An additional challenge for this emerging field centers on data access and data differentiation for health data for Indigenous peoples. Canada has a centralized access point for Indigenous health services and some data generated by health providers, but in the United States health services are divided up across the Indian Health Service, the Veteran's Administration, and a wide number of private healthcare facilities. Researchers, even internal tribal researchers with approval from tribal government, face a difficult challenge in getting to the data that is so vital to furthering this study.

Next Steps

Our aim in this paper has been to start a conversation about the connections between language endangerment, documentation, reclamation and revitalization, and the opportunities and challenges facing those whose practice or research connects with these issues. We believe that this conversation is critical both to improving the products and outcomes of our academic and professional work, but also to

enhancing benefits to Indigenous children and their communities, including and surpassing language vitality. Commitment to the wellbeing of these communities is a primary concern for each member of our working group, and one that unifies an otherwise quite heterogenous mix of Indigenous and non-Indigenous scholars, administrators, and practitioners with diverse expertise and perspectives.

We also consider this an invitation, and an exhortation, to bring these concerns into your work, families, communities, disciplines and institutions. We need you and your colleagues and communities to take this and make it your own, and take it in new, bigger, and better directions.

As initial steps, we encourage all whose work connects to endangered language documentation and LR to participate in the following actions to address the needs we have identified throughout the paper, or to develop and share your own advocacy strategy.

- Encourage professional organizations representing linguistics and allied disciplines to issue policy statements that support, promote, and call for institutional valuation of an expanded concept of language documentation, and establishment of language revitalization research as an important aspect of linguistics research. These statements should be directed at academic, ethics, and funding institutions.
- Experienced researchers should create and share templates and guidance for research instruments and ethical protocols to work with children in field/Indigenous/documentation contexts.
- Form multidisciplinary teams to develop, test, share and publish new research methodologies for conducting child language research.

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43 Foundry Avenue
Waltham, MA 02453

Boston | Chicago | New York | Washington, D.C.

Web: edc.org
E-mail: contact@edc.org
Phone: 617-969-7100