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Assessing Language Revitalization: Methods and Priorities

William O'Grady

Department of Linguistics, University of Hawai'i at Mānoa, Honolulu, Hawaii 96822;
email: ogrady@hawaii.edu



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Abstract

With the rapid growth of interest in language revitalization and the development of hundreds of programs around the world, there is now a recognized need for ways to assess progress and identify problems. The primary objectives of this review are to outline the form that assessments of oral proficiency can take and to illustrate ways in which revitalization programs can begin to monitor their progress, by means of a combination of holistic appraisals of fluency and techniques that target individual features of language.

1. INTRODUCTION

A milestone moment in the history of linguistics occurred in 1992 with the publication of a special issue of *Language*, the journal of the Linguistic Society of America. In a coordinated series of articles, seven scholars documented a pattern of language endangerment and loss that had previously received little attention from the profession as a whole. All this changed with a single memorable sentence: the prediction by Krauss (1992, p. 7) that the twenty-first century “will see either the death or the doom of 90% of mankind’s languages.”

Subsequent studies have confirmed the existence of a global threat to linguistic diversity. The UNESCO Ad Hoc Expert Group on Endangered Languages (2003) notes that 50% of all languages are losing speakers and that 96% are spoken by only 3% of the world’s population. Campbell et al. (2013) report that 24% of Earth’s linguistic diversity has already been lost, much of it within the last few decades, and that, on average, a language dies approximately every three months. For informative book-length treatments of the crisis, see Crystal (2000), Nettle & Romaine (2000), Grenoble & Whaley (2006), Tsunoda (2006), Moseley (2007), Harrison (2008, 2010), Evans (2010), Austin & Sallabank (2011), and Rehg & Campbell (2017).

The facts are sufficiently stark to have produced widespread concern and reaction, creating a turning point in the priorities of contemporary linguistics, which has come to recognize its responsibility to assist communities that wish to preserve or even revive their traditional language. The result has been the birth of a field of study devoted to the goal of language revitalization, on which there is now a substantial literature (e.g., Fishman 2001; Hinton & Hale 2001; Hinton 2002, 2013; Grenoble & Whaley 2006; Cantoni 2007; Reyhner & Lockard 2009; Chambers 2015; Okura 2017).

Although revitalization projects, which number in the many hundreds, have generated support and interest around the world, their success appears to have been modest in many instances. Writing a quarter of a century ago, Fishman (1991, p. 1) made the sobering observation that “most efforts to reverse language shift are only indifferently successful, at best, and outright failures or even contra-indicated and harmful undertakings, at worst.” More than 20 years later, Grenoble (2013, p. 807) expressed a similar concern, acknowledging “indications that revitalization efforts may not be creating new communities of speakers.”

Language revitalization is, by all accounts, a challenging project, and disappointments are inevitable. The question is whether the chances of success can be improved, and if so, how. One promising strategy, on which I focus here, is to adopt a systematic program of assessment to monitor revitalization projects as they unfold and to modify them as necessary. Systematic assessment allows communities to determine how resources should be invested, to know what is realistic and reasonable, and to understand the benefits and perils of particular courses of action. Put simply, if something isn’t working, it should be changed; and if something is working, other people should know about it.

Several leading revitalization programs have made an open commitment to assessment. The 1988 guidebook for a Seneca language and culture school in the State of New York, *Ganöhsesge:kha: Hë:nödeyë:stha*, states: “Evaluation is essential because it aids the teacher in determining whether and to what extent the learning outcomes have been attained” (Borgia et al. 2009, p. 195). Peter et al. (2003, p. 8) note that a founding principle of the Cherokee language program in Oklahoma is that “cultural empowerment must also include an equally empowering plan for assessment and evaluation.” The *Language Nest Handbook* prepared by the First Peoples’ Cultural Council (2014, p. 26) of British Columbia observes: “[W]hen we talk about evaluating a program, we are simply talking about looking closely at what is working and what is not working, so that it is clear how to improve.” A report commissioned by the New Zealand Ministry of Education

takes a similar stand: “The assessment of Māori language proficiency should be an integral part of [language revitalization efforts] so that Māori, and all concerned stakeholders, can plan and strategise effectively for the survival and maintenance of [the language]” (Edmonds et al. 2013, p. 5). Yet, the vast majority of revitalization programs still pay scant attention to assessment matters (Haynes et al. 2010, pp. 21–22; see also Peter et al. 2011, p. 188).

The single greatest obstacle to progress in this area is arguably practical. As Peter et al. (2011, p. 188) note, the development of a reliable and valid assessment program is a multiyear process, requiring extensive planning, testing, and revision, not to mention human and financial resources. The recent development of a general assessment tool for Māori bears witness to this. In their detailed report to the New Zealand Ministry of Education, Edmonds et al. (2013) described a lengthy process that delved into the many challenges associated with proficiency testing, ranging from the definition of proficiency itself to the development of assessment instruments that meet recognized standards for validity and reliability. The project, which built on earlier research on Māori assessment dating back to 1991, required the expertise of linguists, educators, test specialists, and community members. The assessment instrument that was eventually developed underwent extensive testing and revision, involving a large number of students and researchers. It is safe to say that very few revitalization programs have access to the professional expertise and financial resources made available by the New Zealand Ministry of Education. Most must settle for considerably less, but not necessarily for nothing.

The primary objectives of this review are to outline the form that assessments can take and to illustrate ways, including modest ways, in which revitalization programs can begin to appraise the results of their efforts and thereby improve their chances for success. Although my remarks are addressed first and foremost to linguists who are involved in language revitalization efforts, they are intended to be accessible to other groups as well, including educators and community leaders. I focus on the assessment of oral proficiency, because this is the primary objective of most revitalization programs and the only way to ensure that the language can be transmitted to the next generation.

I begin in Section 2 by briefly reviewing the two major types of assessment that have been used in language revitalization programs to date. Section 3 outlines a program for developing an assessment methodology that targets individual components of a language, thereby opening the door to a more focused form of appraisal, whose benefits I illustrate with the help of concrete examples in Section 4. Section 5 briefly examines a variety of factors that do not directly involve linguistic proficiency but ultimately contribute to it. Section 6 offers a brief set of concluding remarks.

2. TYPES OF ASSESSMENT

Research on the assessment of oral proficiency employs two basic methodologies, holistic assessment and targeted componential assessment. I briefly describe both, with a focus on their use in language revitalization programs.

2.1. Holistic Assessment

The first and most common method of evaluating oral proficiency involves a holistic approach, which is characterized by a focus on overall communicative ability rather than mastery of any particular component of language. The usual methodology involves having fluent speakers appraise learners’ performance in a context that involves conversation, storytelling, or some other realistic communicative task. Typically, attention is paid to various factors—pronunciation, vocabulary choice, grammatical accuracy, sociolinguistic appropriateness—but without a focus on any specific predetermined phonological, lexical, or grammatical feature.

Holistic assessment has its roots in the field of second-language pedagogy, where various systems of appraisal have been developed, including those associated with the American Council on the Teaching of Foreign Languages (ACTFL), the Student Oral Proficiency Assessment (SOPA), the Foreign Language Oral Skills Evaluation Matrix (FLOSEM), and the Common European Framework (CEF). Each system makes use of a proficiency scale whose individual levels are defined by reference to criteria that a trained evaluator can apply to the speech of participants. This mode of appraisal appears to be the method of choice in revitalization programs that undertake oral proficiency assessments, and it has been recommended for general use by Haynes et al. (2010, pp. 16, 22) in their report to the US Bureau of Indian Education.

A typical assessment session in the ACTFL system (to take a concrete example) involves a procedure known as an oral proficiency interview (OPI), described in detail in the *ACTFL Oral Proficiency Interview Familiarization Manual* (ACTFL 2012). It begins with an informal exchange of pleasantries between an interviewer and a participant that transitions into a discussion of particular preselected topics of interest, with a view to first determining the participant's performance "floor" and then probing to ascertain the "ceiling" or limits of his/her proficiency. However, the protocol used for holistic assessments in particular revitalization programs varies widely, depending on the training, resources, and preferences of those involved. In the Seneca program, oral proficiency assessment is conducted by a panel of four teachers, based on a videotape of a student recitation (Borgia 2009). In the protocol developed for Hawaiian by Housman et al. (2011), students interact with a fluent adult who elicits various types of speech, including an introduction, a basic conversation, a description of a picture, and a story. Part of the student's performance is subsequently evaluated by the test administrator and part by a team of raters. In the Māori program discussed by Cooper et al. (2004, p. 125), children are asked to describe what they see in a series of six connected pictures; their recorded responses are then assessed by an experienced teacher and rated for "flow, clarity, pronunciation and cadence" (see Haynes et al. 2010 for some general discussion of other methods and their adaptations).

The speech samples used for holistic assessment are analyzed by reference to various predetermined criteria (formal and detailed in some programs, more impressionistic in others) to assign participants to an oral proficiency level. Methodologies differ in terms of the number and types of levels they employ. The scale used in the newly developed assessment instrument for Māori (Edmonds et al. 2013, pp. 52–53) consists of the five levels characterized below (more detailed diagnostics are available for particular domains, including grammar, vocabulary, discourse, and sociolinguistic competence):

1. Very limited proficiency:

Halting fragmentary speech; long pauses; much repetition and short routine phrases. Monotonic, with pitch rises reflecting uncertainty. Incorrect pronunciation of vowels and consonants.

2. Limited proficiency:

Frequent chunking; speech has an unnatural flow; frequent pauses; some repetition of words and phrases. Less monotonic; frequent pitch rises reflecting uncertainty. Frequent mispronunciations; not easily understood.

3. Basic proficiency:

More natural flow for simple sentences; not marked by unnecessary pauses, only occasionally hesitant. Fewer pitch rises reflecting uncertainty; greater awareness of Māori phonology.

4. Elementary confident proficiency:

Sounds smooth and more native-like; pauses are more meaningful; ideas are expressed more confidently, using longer sentences. Only occasional pitch rises reflecting uncertainty. Control over phonology; only occasional errors.

5. Native-like proficiency:

Smooth and effortless; ideas expressed with ease and confidence; capable of paraphrasing; native-like.

No inappropriate pitch rises; accuracy in pronunciation.

Once again, we find adaptations and modifications to suit the needs of individual programs. For example, the system of assessment developed for Hawaiian employs three levels (Housman et al. 2011, p. 24), whereas the Seneca program uses four (Borgia 2009, p. 197). The Northwest Indian Language Institute (NILI) has six benchmark levels, each defined in terms of a speaker's ability to engage in conversations about particular topics.

2.2. Targeted Componential Assessment

A second technique for the assessment of language proficiency draws on a methodology more often associated with the study of first-language acquisition. Unlike holistic methodologies, it examines participants' performance on individual, narrowly focused components of language—specific vocabulary items, selected phonological contrasts, particular morphosyntactic patterns, and so on. I henceforth refer to this approach as targeted componential assessment.

With some notable exceptions, this method of assessment has been largely overlooked in the literature on language revitalization. One reason may be the general lack of research on the acquisition of endangered languages by child first-language learners (e.g., Kelly et al. 2015). Another may be that targeted componential assessment makes use of experimental techniques and requires some prior linguistic analysis in order to identify the particular features of language that should be investigated. In fact, however, a reasonable program for componential assessment can be devised on the basis of quite general principles that do not presuppose advanced training, and the requisite experimental techniques are relatively simple and easy to implement.

An obvious advantage of targeted componential assessment is that it permits programs to identify the strengths and weaknesses of learners on very specific linguistic features, whose importance can extend beyond simple communication. Often, these features instantiate “signature” properties of the language, which make it typologically distinctive and help define its character compared with a more dominant language in the region. For this reason, they may be especially worth preserving as identity markers, both for the language and for the community.

2.3. Commonalities

Both holistic assessment and targeted componential assessment have their place in an overall program of oral proficiency appraisal. Put simply, if the goal is to determine whether learners of Hawaiian can engage in conversations on autobiographical topics, an OPI is in order. By contrast, if there is a question about whether learners of Tlingit can hear and make the contrast between aspirated and ejective uvular stops (/q^h/ versus /q'/), or whether learners of Inuktitut can use the right agreement suffix for transitive verbs whose subject and direct object are both third-person singular, a targeted componential assessment is called for.

The starting point for any assessment is a set of specific linguistic objectives for each stage of the revitalization process (e.g., Haynes et al. 2010, p. 19; Peter et al. 2011, p. 197). Although some of these objectives may be stated holistically (e.g., being able to communicate about highly practical, everyday topics after one year of study, or being able to produce and understand full sentences after the second year), other goals (like being able to inflect verbs for tense) may be more formally stated, especially for school-based programs. Edmonds et al. (2013, pp. 96ff.) identify a very detailed set

of features that are likely to be problematic for child learners pursuing an eight-year program of Māori-medium education.

The precise signposts of development, or its shortfalls, must obviously be determined on a language-by-language basis. Indeed, this is part of what building a system of assessment involves. This article should not be read as an introduction to grammatical analysis or as a tutorial on experimental design (for discussion of the latter topic, see McDaniel et al. 1996, Blom & Unsworth 2010, Eisenbeiss 2011, and Hoff 2011, among others). Nonetheless, it is still possible to illustrate the types of tests that may be helpful in the assessment of particular components of language. The next section addresses this matter.

3. EXAMPLES OF TARGETED COMPONENTIAL ASSESSMENT

3.1. Vocabulary

Vocabulary studies are a common tool for the assessment of linguistic proficiency in revitalization programs (see Cooper et al. 2004 for Māori, Housman et al. 2011 for Hawaiian, Peter et al. 2011 for Cherokee, Sherkina-Lieber & Helms-Park (2014) for Labrador Inuttitut, and Heaton & Xoyón 2016 for Kaqchikel, among many others). A simple and standard way to assess vocabulary development makes use of a picture-based word elicitation task.

One frequently used test of this type, developed by Snodgrass & Vanderwart (1980), makes use of pictures depicting objects that languages typically encode as nouns—plants and animals, geographical features, cultural artifacts, body parts, types of food and drink, and so on. (Verb meanings too can be depicted, especially for concrete actions such as swimming, pushing, giving, and so on.) Needless to say, there can be substantial differences from culture to culture in terms of which objects are familiar and whether their names are frequently encountered in the early stages of language learning. This makes it necessary for researchers to adjust test items accordingly (Yoon et al. 2004).

An alternative methodology for vocabulary assessment involves a comprehension task in which participants select a picture in response to a verbal prompt. This permits an estimate of “passive knowledge,” which is typically more advanced than the ability to produce words (e.g., Peter et al. 2011, p. 199). Loakes et al. (2012) carried out such a task, involving 40 items, on a group of 80 children aged 4;0–12;8 in four Walmajarra communities in Australia. They reported differences tied to age, frequency, and community. Meakins & Wigglesworth (2013) conducted a similar study of Gurindji, with comparable findings.

Vocabulary knowledge can serve as a good indicator of overall linguistic development (Bates & Goodman 1999, Polinsky 2006), and assessments of language proficiency in revitalization programs sometimes make use of this fact. One such study, conducted by Sherkina-Lieber & Helms-Park (2014), involved 20 adult participants with good comprehension skills (but poor fluency) in Inuttitut. The authors report that the participants’ ability to translate basic nouns and verbs into English correlated with their grammatical proficiency in Inuttitut.

3.2. Phonology

Many endangered languages have phonological contrasts that have no counterparts in other languages spoken in the community. Unlike Spanish, for instance, Kaqchikel (a Mayan language of Guatemala) has a contrast between plain and implosive labial stops, as well as contrasts between plain and glottalized stops and affricates at various points of articulation. And, unlike English, Tlingit (a Na-Dene language spoken mostly in southeast Alaska) has a four-way contrast among

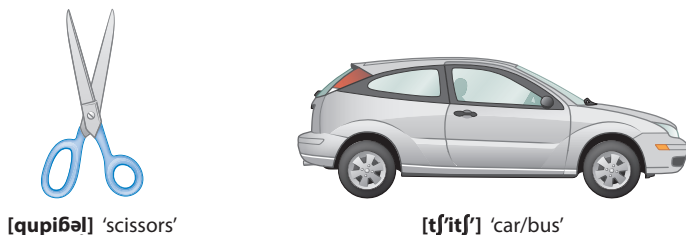


Figure 1

Sample pictures for eliciting object names containing preselected target sounds. [q], voiceless uvular stop; [ʃ], voiced bilabial implosive; [tʃʻ], voiceless glottalized palatal affricate.

ejective velar and uvular fricatives that is found in no other language (Crippen 2010, pp. 40ff.): /xʻ/, /xʻw/, /χʻ/, and /χʻw/. Because distinctions like these are typologically unusual and hence important markers of a language’s phonological identity, it is important that their development be closely monitored.

A variety of basic techniques are available for assessing pronunciation. The most common involves elicitation of words or phrases that contain the targeted sounds, through either pictures or reading aloud (where speakers are literate). For example, Heaton & Xoyón (2016) elicited particular sounds in Kaqchikel by having 37 children (aged 5 to 7) in the Nimaläj Kaqchikel Amaq’ immersion program name pictures and objects (**Figure 1**). A panel of two fluent native speakers who evaluated the children’s pronunciation reported success rates of 25% or less for the ejective and uvular consonants.

Two techniques for assessing the perception of phonetic and phonological contrasts are common. In one (Hattori & O’Grady 2013), participants hear one of a pair of similar words (e.g., minimal pairs such as [seu] ‘sugarcane’ and [seu] ‘sun’ in the Micronesian language Pingelapese) and then point to the corresponding picture. A second technique, dubbed an AX task,¹ involves presenting participants with prerecorded minimally different pairs of words or syllables and asking whether they sound the same or different. Bowers et al. (2009) used this type of task to determine whether adults who had been exposed to Zulu as children (but then lost contact with the language) could hear the contrast between plosive /b/ and implosive /ʙ/.

3.3. Morphosyntax

A useful first step in assessing morphosyntax is to focus on the language’s “coding strategies”—the mechanisms used to distinguish a subject from a direct object. This contrast is vital for many different linguistic phenomena, and it is therefore important to ensure and verify its early emergence. Three coding strategies are common in language—word order, case, and agreement.

Word order is the most widely used strategy for distinguishing between subjects and direct objects, and also happens to be highly salient to children. There is evidence that young learners rely on it to interpret sentences by age 3, if not earlier, and that they often give it priority over other clues that their language might make available, including case and agreement (Hirsh-Pasek & Golinkoff 1991, Slobin & Bever 1982).

Testing the ability to produce basic word order patterns is relatively easy to do. A simple production test can be devised by creating pictures depicting various types of events and asking

¹A variant of this method, the AXB task, requires participants to determine whether the second of three items is identical to the first or the third.

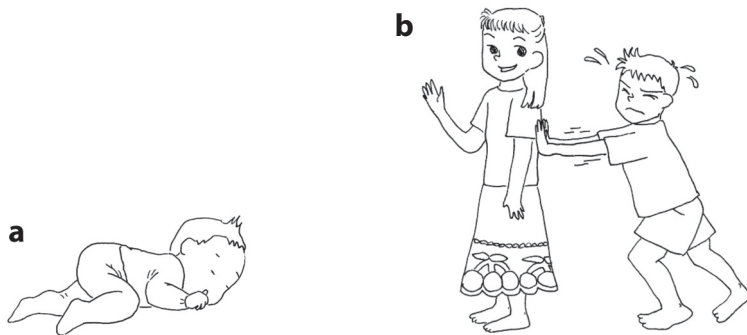


Figure 2

(a) An intransitive event (a child sleeping). (b) A transitive event (a boy pushing a girl). Drawings modified with permission from Raina Heaton.

participants, “What’s happening here?” **Figure 2** illustrates two simple examples. (Because many languages allow subjects and direct objects to be dropped when their referent is already known to the speaker and listener, it is important that each depicted person or object be new to the participant and therefore more likely to call for mention.)

Of course, it is important to have more than one picture for each pattern—a minimum of 5 to 10 pictures is usually advised, involving different individuals and depicting different events (e.g., dancing, crying, jumping, running, swimming, and so on for intransitives). As in the case of vocabulary picture tests, there are culture-specific differences in the appropriateness of particular pictures. This issue is best accommodated by preparing materials with the help of community members and testing them with fluent speakers before they are used for purposes of assessment.

Knowledge of basic case contrasts can be tested by using the same types of elicitation pictures employed for word order (for a detailed discussion of case-related proficiency tests, see Eisenbeiss 2011). However, a variety of additional issues may arise, as many languages limit the use of case markers in various ways. In some languages, for instance, the use of the accusative case is restricted to direct objects with a definite referent. Under such circumstances, elicitation calls for a special context, as illustrated in **Figure 3**. The initial introduction of two animals in **Figure 3a** establishes two referents, helping to ensure that the description of the picture in **Figure 3b** will include a definite direct object that can then be checked for case marking.

A different type of case-related contrast can arise in languages that make a distinction between alienable and inalienable possession (e.g., the Micronesian language Puluwat or the West Papuan

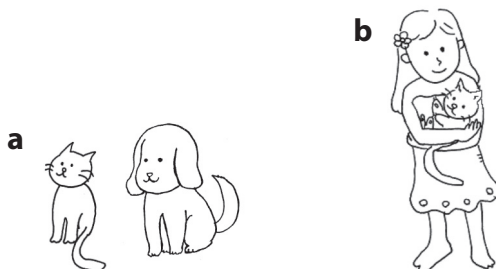


Figure 3

(a) Context: “Here’s a dog and a cat.” (b) “What’s happening here?” (Target: “The/A girl is holding the cat.”) Drawings modified with permission from Ryoko Hattori.

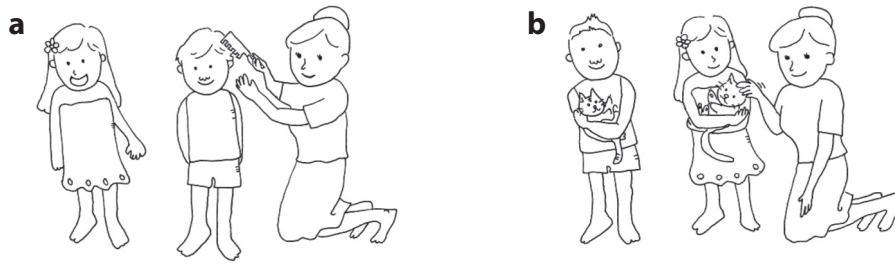


Figure 4

“What’s happening here?” (a) Target pattern: “The woman is combing the boy’s hair” (inalienable possession). (b) Target pattern: “The woman is patting the girl’s cat” (alienable possession). Drawings modified with permission from Ryoko Hattori.

language Abun). Contrasting pictures such as the ones in **Figure 4** can be used to elicit patterns of each type.

Simple pictures can also be used to elicit locative relations, whether they are expressed by case markers, prepositions, postpositions, or spatial nouns. In response to a question such as “Where is the cat?”, learners can be shown a picture of a cat on a table, under a table, in a box, next to a box, behind a box, and so forth, each calling for the expression of a different locative relation. The task can also be easily reversed to test comprehension: Based on an oral description, learners can be asked to point to the picture depicting a cat in a box, on a box, and so on.

Agreement, the third basic coding strategy, is often sensitive to the person and number features of the subject and/or the direct object, depending on the language. Drawings such as those in **Figure 5** can elicit transitive and intransitive verbs with a singular or plural subject. Pictures such as those in **Figure 6** may be useful for languages in which the direct object triggers agreement in the verb.

Some languages manifest agreement for gender or noun class. Some have a three-way distinction involving singular, dual, and plural; some have systems of agreement organized along ergative lines, with the verb agreeing with the direct object of a transitive verb and with the subject of an intransitive verb; and so on. Because such contrasts contribute significantly to a language’s morphosyntactic profile, their retention is often a goal of revitalization programs. Targeted assessment is therefore essential.

Finally, fluency in any language calls for the ability to use more than just simple monoclausal sentences. Relative clauses offer a useful litmus test for the ability to produce and understand dependent clauses. A simple procedure has proven highly effective for the elicitation of relative

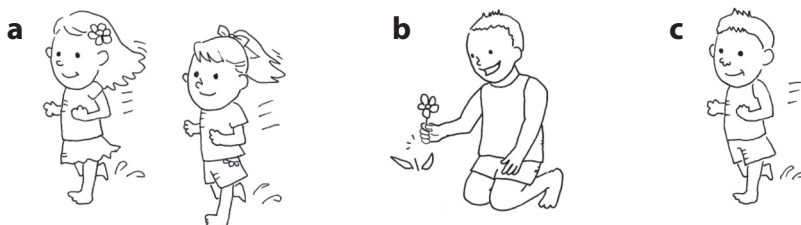


Figure 5

(a) Two girls running. (b) A boy picking/holding a flower. (c) A boy running. Drawings modified with permission from Ryoko Hattori.

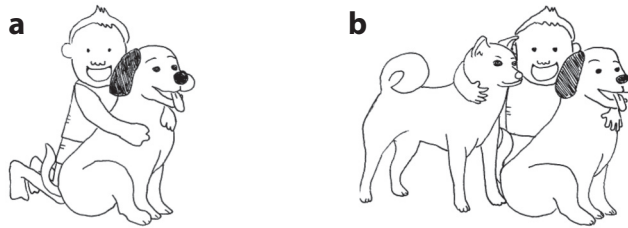
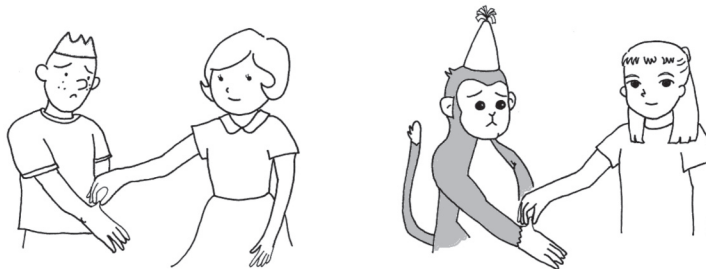


Figure 6

(a) A boy hugging one dog versus (b) a boy hugging two dogs. Drawings modified with permission from Ryoko Hattori.

clause structures (see, e.g., Hsu et al. 2009 and Kim & O’Grady 2016). As illustrated in **Figure 7**, it involves describing two actions to the participant, each involving (in this case) a different girl. The participant is then asked to describe one of the girls to another person (who cannot see the picture)—a task that often produces a relative clause pattern such as “the girl who is pinching the boy.” A recent project, dubbed the Tool for Intergenerational Transmission Assessment (TITA) (Deen et al. forthcoming), offers further examples of picture-based elicitation procedures.

In the first picture, a girl is pinching a boy; in the second picture, a girl is pinching a monkey.



Now, tell X who has the star.



Figure 7

Procedure to target the relative clause “the girl who is pinching the boy.” Drawings modified with permission from Ryoko Hattori.

Table 1 First-person subject pronouns in Hawaiian

Singular	Dual		Plural	
	Inclusive	Exclusive	Inclusive	Exclusive
<i>au</i>	<i>kāua</i>	<i>māua</i>	<i>kākou</i>	<i>mākou</i>
(I)	(I + you)	(I + other)	(I + you + other)	(I + others but not you)

4. THREE CASE STUDIES

There is ample evidence that assessment provides information that can be used to monitor and improve the success of revitalization programs. I briefly review three case studies that illustrate this point. The first (from Hawaiian) focuses on holistic assessment, whereas the second two (from Cherokee and Kaqchikel) target particular components of their respective languages.

4.1. Hawaiian

Housman et al. (2011) report on the development and initial application of the Hawaiian Oral Language Assessment (H-OLA), a project funded by the US Department of Education to evaluate oral proficiency in students in kindergarten through third grade in Hawaiian-language immersion programs. As part of the project, the H-OLA team carried out a far-reaching holistic assessment of 270 students (age 7 to 10), enrolled in seven schools. A variety of techniques, including self-introductions, conversations, picture descriptions, and question-and-answer tasks, were employed. Recordings of the conversations were then used to elicit speech from the children, which was subsequently evaluated by a panel of fluent speakers, according to agreed-upon criteria.

Among H-OLA's many findings was the observation that the children did well on vocabulary that was used primarily in school, but poorly on vocabulary that was used primarily at home. As the study's authors note (Housman et al. 2011, pp. 47–48), this is an important warning sign for a program whose goals include use of the language outside school settings. Another important finding involved the fragility of an important contrast in Hawaiian grammar: The children tended to overgeneralize the first-person plural inclusive pronoun *kākou* by using it where the traditional language calls for a dual form (either *kāua* or *māua*) or for a plural exclusive (*mākou*) (Table 1).

These and other findings were not ignored. As the authors of the study observed at the outset (Housman et al. 2011, p. 17) and again in the conclusion of their report (Housman et al. 2011, p. 54), the assessment provided valuable feedback for improving teaching and learning in the immersion program.

4.2. Cherokee

Cherokee has a system of verbal agreement that is sensitive both to the person and number of the subject and to the type of verb (actional or stative). The following two examples illustrate number agreement for third-person subjects of action-denoting verbs:

- | | |
|---------------------|----------------------|
| (1) Ga-tliha. | (2) Ani-aditasga. |
| 3A.SG-sleep | 3A.PL-drink |
| 'S/he is sleeping.' | 'They are drinking.' |

Using experimental techniques like those described in Section 3.3, Peter et al. (2008) tested the ability of 13 children in a first-grade Cherokee immersion class to produce verb forms. Even

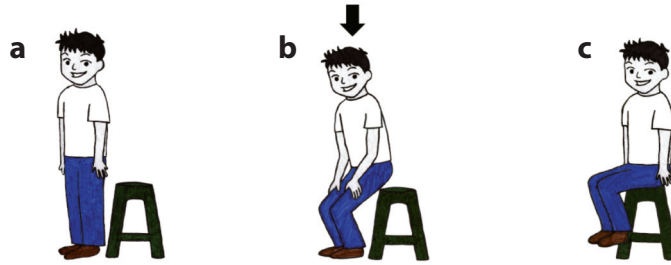


Figure 8

Process versus result. (a) Boy standing. (b) Boy in the process of sitting down (*arrow*). (c) Boy seated. Drawings modified with permission from Raina Heaton.

though eight of the children had already completed two years of immersion kindergarten and five had complete three years, performance was poor. Plural prefixes were employed correctly only about 10% of the time, and fully correct verbs were produced just 13% of the time, on average (Peter et al. 2008, p. 177).

Crucially, the authors recognized the diagnostic value of their results and went on to make an important observation (Peter et al. 2008, p. 180): The teachers had adopted a style of speech in class that did not adequately illustrate the full range of Cherokee verbal morphology, focusing instead on commands (e.g., “Sit down.” “Write on your paper.” “Read page 5.”). As reported in follow-up studies for Cherokee (e.g., Peter et al. 2011), revisions were made to the curriculum and new teaching strategies were adopted with the goal of directing children’s attention to verb forms and giving them an opportunity to employ them in meaningful activities. The result was a quick and dramatic improvement in the learners’ use of verbs.

4.3. Kaqchikel

Heaton & Xoyón (2016) carried out a series of targeted componential assessments that focused on selected aspects of phonology, vocabulary, and morphosyntax in a Kaqchikel immersion program, which offered children (aged 3–9) 10 to 13 hours of exposure to the language per week. One component of the study focused on the aspectual contrast between a process and its result, as illustrated in the following pair of sentences:

The process pattern

- (3) n-Ø-ts’uy-e? (appropriate for the action marked by the arrow in **Figure 8b**)

INCOMPL-3SG.ABS-sit-INTR.POSIT

‘S/he is in the process of sitting’

The result pattern

- (4) Ø ts’uj-uj (appropriate for the result depicted in **Figure 8c**)

3SG. sit-STAT.POSIT

‘S/he is seated’

Even though the form expressing the result is morphologically simpler, the 53 children in the study used it correctly only 26.5% of the time, compared with 47.1% for the form denoting a process.

An interesting feature of the Kaqchikel assessment project was the reaction of the teachers to the findings, including the children's poor performance on verb forms and their difficulty with the pronunciation of many consonants (see Section 3). Although surprised by the gaps in their students' knowledge and by the large differences in the performance of individual children, the teachers described the assessment process as "enlightening" (Heaton & Xoyón 2016, p. 519). The result was a commitment to changes in their classroom activities and materials to address the issues that the assessment had brought to light.

5. OTHER TYPES OF ASSESSMENT

Thus far, I have focused on the assessment of linguistic proficiency per se—a vital strategy for any program of language revitalization, but not sufficient in and of itself. It is also necessary to examine and understand the factors that contribute to proficiency in the first place. One such factor involves language input.

5.1. Language Input

Children are gifted language learners, but their success ultimately depends on ample exposure to whatever language they are learning. The correlation between exposure (input) and development has been well established (see, e.g., Hart & Risley 1995, 1999 and Hoff & Naigles 2002 for English; Weisleder & Fernald 2013 for Spanish; Schneidman & Goldin-Meadow 2012 for Yucatec Mayan; Loakes et al. 2013 for Walmajarri; and Meakins & Wigglesworth 2013 for Gurindji). Put simply, the more input learners receive, the more rapidly their language develops and the better the chances that it will be fully acquired and maintained (see O'Grady & Hattori 2016 and O'Grady 2017 for extensive discussion of this subject and of its relevance to language revitalization efforts).

It is important to bear in mind that successful language revitalization calls for the acquisition and maintenance of two languages—no revitalization program in the world aims to produce monolingual speakers. Bilingualism requires exposure to a balanced input, especially in the case of child learners. It is difficult to suggest absolute upper and lower limits, but there is some indication in the literature on bilingualism that neither language should constitute less than 25 or 30% of the total input to learners (Pearson et al. 1997, p. 56; Genesee 2004; Baker 2014, p. 38).

Assuming an average week of 84 waking hours, this means that children should spend approximately 20 hours per week in situations where they are able to hear and use the target language. Yet, guidelines developed for preschool language programs by the Administration for Native Americans (ANA) of the US Department of Health and Human Services (ANA 2012) requires only 500 hours of exposure per year; that averages out to only 10 hours per week, assuming 50 weeks of exposure.

In actual fact, of course, there are large differences from program to program in the amount of input that is potentially made available to children. According to Okura (2017), for instance, the Ahkwesahsne Mohawk language nest in upstate New York is open nine hours per day, five days per week, year-round, as is the Saami language nest in Sajos, Finland, which requires that children be present a minimum of 26 hours per week. By contrast, many programs offer far less. Although even limited exposure to the community's language is no doubt better than nothing, expectations need to be tailored accordingly.

Given obvious time-related limitations on school-based programs, it is vital to ensure that children receive rich high-quality input during the hours that they are in school. To date, however, there have been few, if any, studies of this issue. In an attempt to remedy this problem, the University of Hawai'i at Mānoa is currently conducting a comparative study of four immersion

programs—Māori (New Zealand), Gaelic (Scotland), Western Subanon (Philippines), and Kaqchikel (Guatemala). The first phase of the project consists of three steps: collecting sample recordings of language use by teachers over a multiday period, transcribing the recordings, and analyzing the transcripts to determine the character and quantity of the input. Frequency counts, taking into account both types and tokens, are then made for vocabulary and morphosyntactic patterns. It is hoped that such research, once deepened and extended, will help individual programs establish benchmarks for the type and quantity of input needed to meet their goals.

One obvious way to increase the amount of input to which children have access is to encourage use of the language with family members. I know of only one systematic study of how and whether this opportunity is exploited. Edmonds et al. (2013) report that whereas 35.6% of students in Māori-medium programs have the option of speaking Māori at home, thanks to the fluency of other family members, only 16.3% do so on a regular basis.

5.2. Teacher Proficiency

A near-universal challenge for language revitalization programs is the shortage of qualified fluent teachers (Cooper et al. 2004, p. 149; Lowe & Walsh 2009, p. 110; Peter et al. 2011, p. 192). Because, by definition, endangered languages lack younger native speakers and because elder speakers are often not willing or able to undertake the rigors of daily classroom teaching, the job often falls to instructors who are themselves second-language learners. NeSmith (2012, p. 27) reports that all but 1 of the 140 teachers in Hawaiian immersion programs in the 2010–2011 academic year were themselves second-language learners. The 2010 Te Reo Māori report identified a trend in that direction in New Zealand as well, noting that some Māori families have been reluctant to enroll their children in immersion programs because of concerns about the fluency of the teachers (Te Reo Māori 2010, pp. 28ff., 58ff.). An even more extreme case is described by Johnson (2016), who reports on a Tlingit revitalization program in which, in the absence of even one fluent instructor, the students take turns preparing lessons and serving as teacher for the rest of the group. Hinton (2003) devotes an entire paper to a methodology for teaching in situations where the instructor is not fluent.

Clearly, fluency needs to be an important criterion in the recruitment and training of teachers in revitalization programs. Indeed, in many cases, the teacher is the principal (if not the sole) source of input for learners. At least some communities have begun to address this issue. In their study of proficiency in the Nimalāj Kaqchikel Amaq' program, Heaton & Xoyón (2016, p. 511) had the four teachers take the same assessment tests as their young students; reassuringly, they had near-perfect scores. The Navajo Nation, in conjunction with the New Mexico State Public Education Department, has developed a system for testing and certifying teachers and other civil servants. In an interview context, participants are asked to provide “in-depth information” on six cultural categories that reflect “major components of Diné [Navajo] cultural knowledge,” including kinship, the clan system, child-rearing practices, the Navajo basket, oral history, and traditional music and dance (Navajo Nation 2005). Responses are recorded, and the participants' proficiency is subsequently rated by three to five individuals who are knowledgeable about the culture and proficient in the language. Success is recognized by a Native American Language and Culture Certificate at one of two levels.

5.3. Educational and Psychological Benefits

Yet another area that calls for systematic study involves the educational benefits of school-based language revitalization programs in areas other than the language per se. A number of studies

point to the benefit of early education in the mother tongue. On the basis of a longitudinal study of 700,000 students representing 15 minority languages, Thomas & Collier (1997) report that instruction in the child's native or heritage language is the single most powerful predictor of academic success, even in cases where the child is not fully proficient in that language. McCarty (2011) reports that indigenous language revitalization programs contribute not only to language maintenance but also to improved academic performance. She notes that Navajo immersion students have consistently outperformed their peers in English-only programs on state tests, even in mathematics and English—in addition to developing their skills in spoken and written Navajo. Heaton & Xoyón (2016) report a further relevant fact: Whereas 40% of all Maya children in Guatemala have to repeat first grade, all of the students in the Nimalaj Kaqchikel Amaq' immersion school progress to the next grade every year.

A related issue involves the possible social and psychological benefits of revitalization programs. There is accumulating evidence that retention of the traditional language is one of several factors that contribute to the overall health and functioning of indigenous communities, even resulting in substantially lower suicide rates (Hallett et al. 2007, Chandler & Lalonde 2008). This raises the question of whether the creation of revitalization programs in communities where the language is in decline might have an impact independent of linguistic success. There is at least anecdotal evidence that it may. For example, Nikkel (2006) reports that even though a Cree immersion program in Manitoba, Canada, produced relatively modest linguistic gains in its first year of operation, the community felt a great sense of pride in the very existence of the program. Peter et al. (2011, p. 194) make similar observations about the early days of the Cherokee immersion program.

6. CONCLUDING REMARKS

A glimpse into the likely future of language revitalization comes from the Survey of Global Language Revitalization Efforts (Pérez Báez et al. 2017), carried out by the Recovering Voices initiative of the Smithsonian Institution National Museum of Natural History and by the Department of Linguistics at the University of Hawai'i at Mānoa. The analysis of responses to a pilot version of the survey from 30 revitalization initiatives in Europe, Australia, Asia, Africa, and the Americas revealed a potentially major trend: Only one of the programs had as its foremost objective the transmission of the community's language to children by their parents. The most commonly stated objective of the remaining programs was to save their language by having it taught in school.

This objective diverges significantly from the traditional goal of language revitalization expressed in the influential work of Fishman (1991), who emphasized the restoration and maintenance of intergenerational transmission of the community's language in the home (see also Giles et al. 1977; Krauss 1992, p. 7; King et al. 2008; Dwyer 2011, p. 1; Loakes et al. 2013, p. 704; and many others). The focus on school-based strategies for language revitalization substantially changes the way in which we need to think about language revitalization and the resources required to implement it.

The long-term risks of the school-based approach are evident. An endangered language will be forever in peril; it will have to be saved over and over again, in each cohort of schoolchildren, a growing number of whom will come from families who are unlikely to speak the language at home. Moreover, as the last generation of native speakers passes away, their descendants will have access to an increasingly faint facsimile of the original language. The search for qualified fluent teachers will become ever more difficult, with increasing pressure for compromises that could ultimately diminish the quality of the input available to language learners.

Two compelling (albeit competing) ideas about the best strategy for language revitalization, both dating back to the 1990s, are now in jeopardy. The first idea, which is that schools cannot take

over the job of teaching a language if families do not (e.g., Cantoni 2007, p. vi), runs counter to an emerging necessity, if the trend evident in the Smithsonian/University of Hawai'i survey cannot be arrested. The second idea, which is that a successful immersion program essentially comes down to "a room, a teacher, and some children" (Kipp 2009, p. 3), is not fully viable either. The room is not enough: It needs to be filled with materials for teaching and learning. The presence of adults in the room is not enough: They need to be fluent, and they need to know how (and how much) to talk to children. The presence of children is not enough, either: They need to have opportunities to hear and use the language in meaningful ways, hopefully outside the school as well as inside, for many hours every week.

School-based language immersion programs are certainly useful, but they do not guarantee that children will master the language of their parents or grandparents. How could they? The number of hours of exposure to the language provided in most immersion schools flirts with the bare minimum that is generally thought to be necessary for bilingualism; undoubtedly, many schools provide substantially less. It is not surprising that early optimism about the success of school-based immersion programs of all types (including those for familiar European languages) has been tempered by reports of shortfalls in various areas of linguistic proficiency (see, e.g., Genesee 2004 and Lyster 2004, 2007 for French; Peter et al. 2011 for Cherokee; Housman et al. 2011 for Hawaiian; and Ó Duibhir 2009 for Irish). It is now widely recognized that explicit instruction, with a focus on particular features of the language, is a necessary supplement to simple exposure to the language in the course of daily school-related activities.

Nonetheless, if schooling is the path that communities choose, out of either necessity or convenience, it is the responsibility of linguists to assist, if asked, in finding ways to maximize the chances of success. The need for assessment will become all the more important in this enterprise, and will have to be carefully planned. Studies of language acquisition in a home environment are typically designed to answer the question of how children learn language, not whether or to what extent they learn it. In contrast, studies of language acquisition in classroom settings must be designed to address the additional question of where the acquisition process falls short, as it inevitably seems to do.

The challenges that lie ahead are significant. The threat to indigenous languages is almost certain to be permanent, and the path to language revitalization appears to be narrower and steeper than previously thought. But the way forward is perhaps also better defined than before, as a clearer understanding emerges of what is needed—roughly, exposure to very generous amounts of language, supplemented by instruction to address the shortfalls identified by rigorous assessment. This, in turn, opens the door to ever more effective strategies for revitalizing endangered languages, creating opportunities for success that would not otherwise have been evident.

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RELATED RESOURCES

- American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines. https://www.actfl.org/sites/default/files/pdfs/public/ACTFLProficiencyGuidelines2012_FINAL.pdf
- Common European Framework (CEF) of Reference for Languages: Learning, Teaching, Assessment. https://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf
- Foreign Language Oral Skills Evaluation Matrix (FLOSEM). <https://web.stanford.edu/group/CFLP/research/flosem.html>
- Northwest Indian Language Institute (NILI) Language Proficiency Benchmarks. <http://pages.uoregon.edu/nwili/language-proficiency-benchmarks>
- Student Oral Proficiency Assessment (SOPA). <http://www.cal.org/ela/sopaellopa/index.html>

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Errata

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