

## Pre-Revitalization Language Assessment

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Testing is increasingly recognized as a vital part of language revitalization. I demonstrate here that assessment of linguistic knowledge should also be part of the planning process that precedes the creation of a revitalization program. I take as an example Jejueo, the language of Korea’s Jeju Island. Whereas previously published work contradicted UNESCO’s conclusion that the language is critically endangered, a test that I designed to elicit basic vocabulary and verbal patterns from 224 participants (from elementary school students to senior citizens) revealed otherwise. Alarming deficits in basic knowledge of the language were uncovered that both confirmed UNESCO’s classification of the language and identified the particular areas in which remediation is required.

**1. Introduction**<sup>1</sup> Assessment has long been recognized as an essential component of language revitalization. Peter et al. (2003:8) summarize the case for this practice by noting a founding principle of the Oklahoma Cherokee language program: “cultural empowerment must also include an equally empowering plan for assessment and evaluation.” A similar sentiment is expressed in a report commissioned by the New Zealand Ministry of Education: “The assessment of Māori language proficiency should be an integral part of [language revitalization efforts] so that ...all concerned stakeholders can plan and strategize effectively for the survival and maintenance of [the language]” (Edmonds et al. 2013:5). Countless other revitalization projects share this commitment, ranging from Hawaiian (Housman et al. 2011) to Kaqchikel (Heaton & Xoyón 2016) to Navajo (Navajo Nation 2005) to Seneca (Borgia 2009), among many others.

In this paper, I suggest that assessment should also be a vital component of a community’s *preparation* for a revitalization program. I report here on the creation and implementation of such a project on Korea’s Jeju Island. I will begin with a brief summary of the status of Jejueo, the island’s endangered language, and of the plans to help preserve and revitalize it. In Section 3, I describe the test instrument, which was designed to assess knowledge of vital vocabulary items and grammatical patterns in five age-defined cohorts on the island. Section 4 reports the findings. I offer some brief concluding remarks in Section 5.

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**2. Jejeuo** Jejeuo (ISO 639-3 *jje*) is the traditional language of Jeju Island, a province of the Republic of Korea. Although the language is closely related to Korean, the two are not mutually intelligible (Yang et al. 2019), and a recent reference grammar of Jejeuo documents major differences in the vocabulary and morphosyntax of the two languages (Yang et al. 2020). Jejeuo has been categorized as critically endangered by UNESCO, which estimates that its remaining fluent speakers make up only about 2% of the island's population and are mostly over 70 years old (Moseley 2010).

Since 2010, the plight of Jejeuo has gained increasing attention from both the local government and grassroots organizations, creating significant momentum for the language's preservation and revitalization. The provincial Office of Education has taken an active role in these efforts by proposing and establishing a general plan for integrating Jejeuo into the curriculum of public schools on the island. Currently, however, the language is taught only as an extracurricular activity in some schools and as a supplementary subject (12 to 20 hours of instruction per *year*) in a number of others.

These developments notwithstanding, there has been dissent about the urgency of the situation and the veracity of UNESCO's findings. Indeed, based on research carried out five years after the UNESCO investigation, Eun-Hee Kim (2015) concluded that although Jejeuo is at some risk, it is not critically endangered. A majority of the population still speaks the language, she claimed, and children still hear and use it at home.

Kim's evidence was drawn entirely from a self-assessment survey involving 272 participants (80 teenagers, 94 20-year-olds, and 98 30-to-50-year-olds). Her key finding was that 48% of the teenagers, 56% of 20-year-olds, 74% of 30-year-olds, 80% of 40-year-olds and 89% of 50-year-olds reported that they speak Jejeuo well (an average of 69% of all respondents). Overall, she reports, 83% of Jeju residents use Jejeuo in their every-day lives. Moreover, according to a report cited by Kim (2015:303), a 'street survey' of an unspecified number of teenagers in a local high school revealed that 56% of them supposedly use Jejeuo often in their daily lives.

Kim's survey is a valuable contribution to the study of Jejeuo, and scholars are grateful for the information that she collected in her pioneering survey. At the same time, however, caution is called for in the absence of a more direct test of actual knowledge of Jejeuo. The reliability of self-assessment has been called into question (see Grenoble 2013:28 and the references cited there), and at least two previous studies have uncovered a mismatch between self-assessment and actual proficiency. Based on a study of 65 speakers of Jejeuo of different ages and levels of comprehension ability (as determined by an independent test), Yang et al. (2017) report that more accomplished participants tend to assess themselves lower than their actual ability, whereas less knowledgeable participants assess themselves more highly than their true language ability warrants. Along similar lines, Sato (2016) reports that younger people on New Britain Island, Papua New Guinea (PNG) vastly overestimate their proficiency in their traditional language (Bebeli), despite their very poor performance on comprehension and production tasks and their parents' insistence that their offspring can neither speak nor understand the language.

The purpose of my study is thus two-fold. On the one hand, it is important to determine whether Kim's assessment of the vitality of Jejeuo is accurate, despite contradicting UNESCO's estimate that it is critically endangered. On the other hand, and independently of the first question, it is also important to identify gaps – whether large or small – in the lexical and morphosyntactic knowledge of the island's population so that appropriate plans can be made for the language program envisioned by the province's Office of Education. I turn next to the particular assessment tool that was designed for these purposes (and that might well serve as a model for other communities as well).

**3. The Assessment Instrument** The assessment instrument consisted of a written elicited production task. I chose a production task because that particular skill is more indicative of the participants' ability to eventually carry the language forward to the next generation than is a mere passive ability to understand it. The choice of a written format was based on two practical considerations: language tests in Jeju Island schools (including those for English) are typically conducted in a written format, with instructions in Korean; moreover, the plan to test several hundred participants would not have been feasible if I had used an oral format that required administration to individuals rather than groups.

Although Jejeuo is primarily a spoken language, the same is true of Korean for young children. Fortunately, *Hangeul* (the Korean alphabet) is easy to learn, and its sound-to-letter spelling conventions are the same for Korean and Jejeuo since words in the two languages manifest the same phonological patterns. No participant showed any hesitation in writing his or her responses, and I did not reject any responses because of occasional spelling errors, including words that were spelled phonetically.

**3.1 Participants** The study involved the five cohorts of participants summarized in Table 1.<sup>2</sup> All had been born and raised on Jeju Island, and had at least one parent who was a native islander. Because Jejeuo is not yet taught in the school system, child speakers of Jejeuo are 'heritage learners' who have received enough exposure to the language in a home or community setting to acquire at least parts of its vocabulary and grammar, despite its absence from most domains of life on Jeju Island. To date, there have been no studies on the acquisition of Jejeuo in a home setting.

**3.2 Materials** The test had two main components, one focusing on basic vocabulary and the other on grammatical patterns that are essential for even the simplest types of communication.

The vocabulary test was designed to elicit 45 lexical items (35 nouns, 5 action verbs, and 5 stative verbs) with the help of pictures. In the absence of corpus studies for the language, vocabulary items were selected that satisfied three criteria: (i)

<sup>2</sup>Of the adult participants, one had graduated from high school and 22 from college; 4 had post-graduate degrees. The educational background of the remaining 4 participants in this cohort could not be determined.

**Table 1.** Description of participant groups for Jejeuo (n=224)

Participants	Elementary	Middle School	High School	College	Adult
Age	10	13	16	18–27	30–67
Male	23	22	19	17	13
Female	28	28	31	25	18
Total	51	50	50	42	31

reference to basic concepts in everyday life; (ii) commonality of usage in the speech of native speakers, as judged by a native speaker linguist; and (iii) distinctness from the corresponding Korean word, so as to ensure that the identity of the language in which the participant responded would be clear. A full list of items can be found in Appendix A.

As can be seen in Table 2, the portion of the test devoted to grammatical patterns focused on six types of verbal inflections, of which four are essential for expressing basic contrasts involving tense, aspect and modality (completed versus ongoing versus conjectured), one is needed to express simple *yes/no* questions, and one is used to express deference to an addressee of higher age or social status (an important cultural practice). All six patterns differed in important ways from their Korean counterparts.<sup>3</sup>

**Table 2.** Summary of the target verbal patterns

Pattern	Jejeuo (42 tokens)
Ongoing events in the present (6 items)	<i>Nang singg-eoms-jeo.</i> tree plant-CONT-SE '(He) is planting a tree.'
Completed events (6 items)	<i>Gwegi nakk-as-jeo.</i> fish catch-PFV-SE '(He) caught a fish.'
Conjectured Events (6 items)	<i>Meog-euk-yeo.</i> eat-PROSP-SE '(He) will eat.'
Ongoing events in the past (6 items)	<i>Cheg ig-eoms-eon.</i> book read-CONT-PFV-SE '(She) was reading a book.'
Yes/No questions (6 items)	<i>Nongbani-ga?</i> farmer-SE '(Is he) a farmer?'
Deference (12 items – 6 action verbs and 6 stative verbs)	<i>Dawl-ams-u-da.</i> run-CONT-AH-SE '(She) is running.' <i>Jog-su-da.</i> small-AH-SE '(It is) small.'

<sup>3</sup>AH = addressee honorific, CONT = continuative, SE = sentence ender, PFV = perfective, PROSP = prospective

Grammatical patterns were elicited with the help of pictures and a context. Sample test items can be found in Appendix B.

Since the tasks are devised to test very basic vocabulary items and verbal patterns, the test construct is quite narrowly focused. If it were to turn out that the participants exhibited a high level of performance on these tasks, it would be necessary to devise additional testing in order to further assess their knowledge. On the other hand, poor performance on the tests would suffice to establish major deficits in the participants' knowledge of Jejeuo.

All instructions and contexts were provided in Korean, the children's dominant language. This followed the usual practice for language testing on Jeju Island (including for English), while at the same time ensuring that there would be no misunderstandings about the task itself or the events that the participants were supposed to describe.

**3.3 Norming** In order to establish a set of possible target responses for each test item, fluent native speakers of Jejeuo were recruited to take the Jejeuo test as part of a baseline study. They performed as expected, given previous descriptions of the language, producing data that allowed the creation of an answer key for scoring the responses of the test participants.

A validation study was also conducted using a Korean version of the task in order to ensure that the test items, pictures, prompts and instructions were clear. Participants for this study consisted of 44 10- to 11-year-old elementary school students on Jeju Island who were not part of the Jejeuo assessment project. As can be seen in Table 3, their Korean performance reached ceiling on the vocabulary task and on two grammatical patterns, with a level of success of over 80% in all but the past continuative patterns (whose mean score was 76.89%).

**Table 3.** Mean accuracy rate on the Korean Test Tasks (n=44)<sup>4</sup>

Domain	Mean (%)	SD
Vocabulary	97.53	2.84
Verbal Patterns	86.74	18.57

We can therefore be confident that the instructions, contexts and test items were clearly understood, opening the door for a direct test of children's knowledge of Jejeuo.

**3.4 Procedure** On the assigned day, the school-aged participants were given a test packet, and were asked to answer the questions that it contained. Their teacher explained to them that the test was entirely voluntary and that they could stop at any time. All materials and procedures had previously been vetted and approved by the Internal Review Board of the researchers' home institution. All the participants finished the test within the allotted time of one hour.

<sup>4</sup>Most of the incorrect responses on the Past Continuative patterns involved use of the Present Continuative.

The test was administered by the children’s teacher in their usual classroom. Many teachers in the Jeju school system have some degree of fluency in Jejeuo; however, only Korean is used in the schools, so the students would not have been aware of their teacher’s level of proficiency in Jejeuo.

The test for adult participants was administered either in their homes or in quiet places where two to five people could take the test together. The same test-taking procedure was used for the adult groups as for the child participants.

**3.5 Scoring** Two native speakers of Jejeuo were recruited to score the participants’ responses. The raters used Excel files to record responses, which were classified employing a binary scoring system: 0 for non-target responses and 1 for target responses, as determined by the responses of the native speaker controls. Only targeted lexical items and grammatical features were assessed; other parts of the responses were not assessed or rated.<sup>5</sup>

The agreement rate for the two scorers was 97.2 %. An inter-rater reliability analysis using the Kappa statistic was performed to determine consistency among raters, yielding Kappa = 0.781 ( $p < .0001$ ), 95% CI (0.762, 0.798).

**4. Results and discussion** Statistical data analyses and visualizations were carried out in the R environment which is a free open-source software package (R version 3.4.4; R Core Team, 2013). Since the current data did not meet the parametric assumptions, a Kruskal-Wallis H test was used to investigate independent group differences. The Kruskal-Wallis H test is a non-parametric alternative to one-way ANOVA test (Corder & Foreman 2014; Sheskin 2003) that is recommended when the assumptions of the latter test are not met. The Wilcoxon signed-rank test (adjusted using the BH) was conducted after running the Kruskal-Wallis H test as post hoc measures.

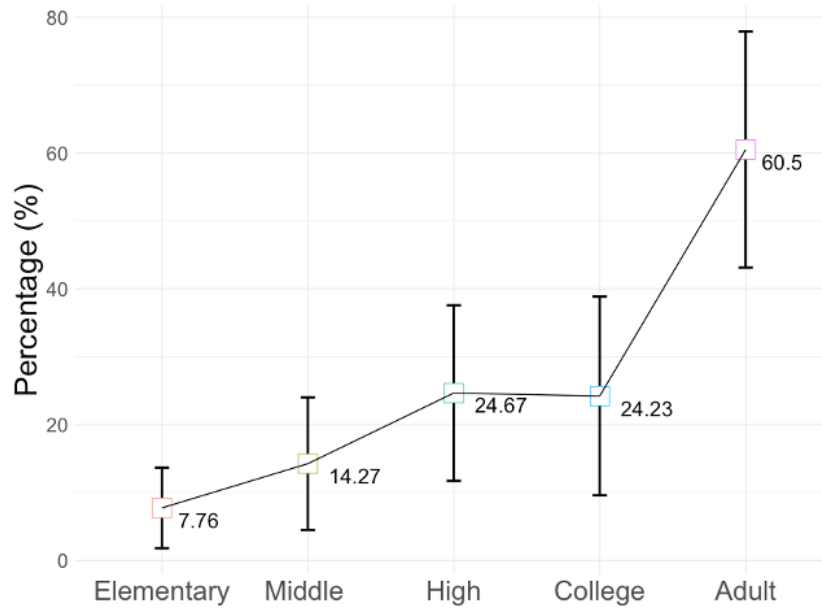
**4.1 Results** The results for the vocabulary portion of the test are summarized in Table 4 and Figure 1.

**Table 4.** Vocabulary results by group

Group	n	Mean (%)	SD
Elementary	51	7.76	5.94
Middle	50	14.27	9.77
High	50	24.67	12.92
College	42	24.23	14.62
Adult	31	60.5	17.37

<sup>5</sup>To classify a response as correct, I required only that it be in Jejeuo and that it be relevant to the prompt. Thus, in response to the query about shoe size in the final item in the Appendix, for example, a participant could respond in a number of ways: ‘it is small,’ ‘it is too small,’ ‘it doesn’t fit,’ and so on.

Figure 1. Vocabulary results by group



Note. The error bars (also known as whiskers) depict standard deviations.  
The numbers and squares indicate group mean percentage scores.

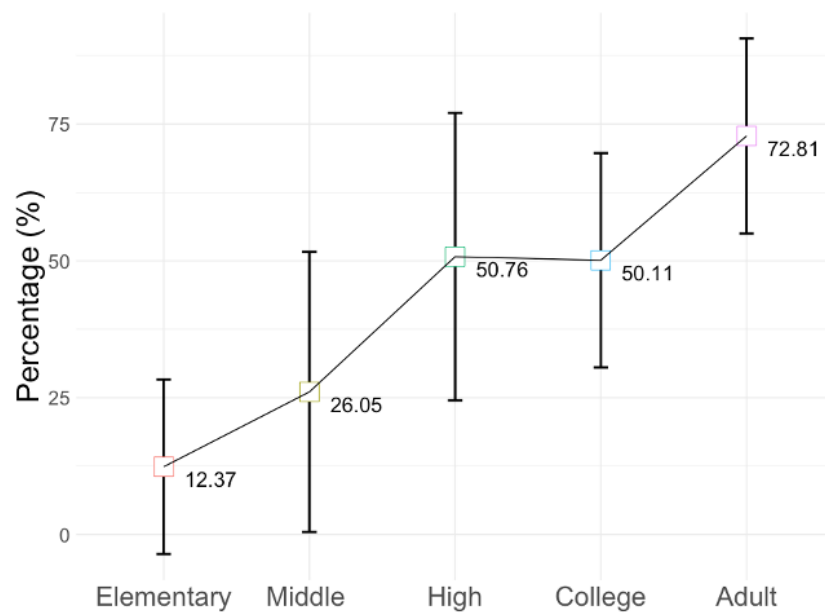
As can be seen here, the success rate on the vocabulary items is very low (a mean of just 7.76% for the elementary school children and 14.27% for the middle school children). Even the high school and college participants did poorly, attaining a mean of only around 25%. A Kruskal-Wallis H test (one-way ANOVA on ranks) revealed a significant age effect ( $p < .001$ ). A post hoc analysis with Wilcoxon signed-rank test (adjusted using the BH) confirmed that there was a significant difference between all pairs of groups except for the High School and College groups ( $p = .50$ ).

At a qualitative level, the only vocabulary items other than a few kinship terms that were produced by participants in the middle school, high school, and college groups were *badang* ‘sea’, *jiseul* ‘potato’, *dosegi* ‘pig’, and *gonengi* ‘cat’. (A telling finding here is that the children knew the Jeju words for ‘grandfather’ and ‘grandmother,’ but not for ‘father’ and ‘mother.’) Moreover, fewer than 50% of even the adult participants knew such basic words as *sanggoji* ‘rainbow’, *gojang* ‘flower’, *teyeog* ‘grass’, *gawlgaeabi* ‘frog’, *mundeulida* ‘drop’, *swette* ‘key’, *dugji* ‘shoulder’, *yangi/naws* ‘face’, *jilda* ‘long’, *dawgmawlawb* ‘knee’, *geyeomji* ‘ant’, *se* ‘tongue’, *simda* ‘hold’, *gawsda* ‘cut’, and *chalong* ‘basket.’ Appendix C explores this matter further by reporting on the likelihood that each of the vocabulary items in the study would be known to an expanded group of 51 adults.

Table 5 and Figure 2 report the results for the assessment of verbal patterns. Here too, the success rates for the youngest two groups are extremely low—12.37% for the elementary school children and 26% for their middle school counterparts. Even the high school and college participants produced appropriate responses only about half the time. Where there were significant asymmetries in performance, they tended to

**Table 5.** Verbal pattern results by group

Group	n	Mean	SD
Elementary	51	12.37	15.96
Middle	50	26.05	25.61
High	50	50.76	26.26
College	42	50.11	19.58
Adult	31	72.81	17.82

**Figure 2.** Verbal pattern results by group

*Note.* The error bars (also known as whiskers) depict standard deviations. The numbers and squares indicate group mean percentage scores.

favor the perfective and present continuative patterns—both of which are very frequently heard in Jejueo (the perfective has the further advantage of being a close cognate of its Korean counterpart).

The ability to produce verbal patterns was tested in three main types of conditions: Tense, Aspect and Modality (TAM), Question Formation, and Deference. The results for these tasks confirmed an overall age-related upward trend in mean percentage scores. A Kruskal-Wallis H test (one-way ANOVA on ranks) revealed that the age effect was significant ( $p < .001$ ). A post hoc analysis with Wilcoxon signed-rank test (adjusted using the BH) confirmed that there was a significant difference in scores between all pairs of groups except for the College and High School groups ( $p = .53$ ).

I also conducted a detailed error analysis of the elementary-school participants, whose age make them a particularly critical cohort. Table 6 summarizes their response types.



**Table 6.** Response types by elementary-school participants

	Correct	No response	Korean response	Other	Total # of responses
Vocabulary	178 (8%)	1000 (44%)	1064 (46%)	53 (2.3%)	2295
Verbal Patterns	265 (12%)	1116 (52%)	675 (32%)	176 (8%)	2142

Two response types stood out. The first was a failure to respond at all: 44% of all responses on the vocabulary test and 52% on the verbal pattern task. There were also 36 incorrect responses that involved an attempt to use Jejeuo, but in an inappropriate way (e.g., using the word *manong* ‘garlic’ in place of *jiseul* ‘potato’) The second was to provide a Korean word or phrase, which made up 46% of all responses in the vocabulary items and 32% of the verbal patterns. An additional 13 responses were a mixture of Korean and Jejeuo.

**4.2 Discussion** The findings of the current study stand in stark contrast to the results obtained in the Korean version of exactly the same test items. As reported above (§3.3), children of the same age and background as the youngest participants in the Jejeuo study performed at or near ceiling on the Korean version of the test. Yet, performance on exactly the same tasks in Jejeuo yielded a very low rate of correct responses, despite the fact that they elicited identical vocabulary items and equivalent verbal patterns, using the same methodology and were administered under the same conditions.

The overall pattern of results aligns well with the demographic profile reported in the UNESCO study, which noted that the only fluent speakers of Jejeuo are in their 70s or older. In contrast, the findings are very much at odds with the much more optimistic assessment of the status of Jejeuo yielded by Kim’s survey, which was based entirely on self-estimates of proficiency.

It is very unlikely that the mismatch in findings could be attributed to differences between speaking ability (the target of Kim’s survey) and the written format of my test, as all the words and the verbal patterns targeted by the test were appropriate for use in either register. The vocabulary items all refer to concepts and objects common in Jeju culture, and the verb forms are all essential for even the most basic types of communication. Moreover, as previously noted (§3), Jejeuo can be written in the same way as Korean.

A more promising explanation for the discrepancy between my results and those of Kim is that the survey participants overstated their proficiency in Jejeuo, possibly to emphasize a sense of belonging to their linguistic community. As Grenoble notes (2013:29), “Because language is an integral part of identity, people who identify with a particular ethnolinguistic (or heritage) culture may claim knowledge of the language even when they are far from fluent.” Indeed, Yang et al. (2017) report just such a result in their study of a group of adult participants whose pre-test self-assessment of their proficiency in Jejeuo was at odds with their performance on a simple comprehension task.

The findings of the current study are scheduled to be conveyed to representatives of the Jeju Office of Education by the author, who is very active in the Jejeuo revitalization movement. It is hoped that the information gleaned from this study, including the particular deficits uncovered in the testing, will assist the Office in its development of the Jejeuo curriculum that is currently being prepared for use in elementary schools.

### **5. Conclusion** The findings support two conclusions.

First, UNESCO was correct in classifying Jejeuo as critically endangered, with fluent speakers only in the grandparents' generation. Kim's self-assessment study notwithstanding, there are no grounds for denying the urgency of immediate and intense revitalization efforts if Jejeuo is to be saved.

Opportunities for exposure to Jejeuo decrease each year, as elders pass away. As a result, children born in 2010 have in general had fewer opportunities to hear Jejeuo than children born in 2000, who in turn have received less exposure to the language than children born in 1990, and so on. The consequences for knowledge of Jejeuo are just what I have reported: the younger participants in the study have a significantly lower level of lexical and morphosyntactic competence than their older counterparts, whose own somewhat higher rates of success are themselves very modest.

There is no reason to think that the situation can change on its own. The youngest group of participants in the study (the elementary school group) are on average ten years old and therefore well beyond the point by which the basic vocabulary and grammatical patterns of a language should have been mastered. Indeed, these children are already approaching the commonly assumed 'critical period' for uninstructed language learning, and are beyond the point at which the window for the naturalistic acquisition of morphosyntax begins to close (age 4 to 6, according to Schwartz (2003) and Granena & Long (2012), among others). Although the young participants in the study might conceivably add to their Jejeuo vocabulary in later years as the result of casual contact with more fluent speakers, there is little prospect of dramatic improvement in their mastery of grammatical patterns without a significant enrichment in their exposure to the language, perhaps accompanied by a complementary program of instruction.

Second, the program of language revitalization that is called for will require a very full and robust curriculum, as major deficits are evident in even the most basic vocabulary items and grammatical patterns. One way to emphasize the extent and seriousness of these deficits is to compare the results of the Jejeuo test with those of an almost identical test for English that was administered in the same time period to the same participants, as described in detail by Yang (2018).

Compulsory English instruction begins from Grade 3 in elementary school in Jeju, as in all other parts of Korea. Students receive two hours of weekly instruction in Grades 3 and 4, three hours in Grades 5 through 8, four hours in Grade 9, and five hours from Grade 10 through the end of high school. A major turning point in the developmental profiles for both English and Jejeuo can be seen in the results for the middle school students: despite the very modest level of instruction that they received,

the eighth-grade students did significantly better in English than in Jejueo, with an especially large advantage in the area of vocabulary. This dramatic contrast further underlines both the decline of Jejueo and the urgent need for remedial action.

In conclusion, the commitment to a pre-revitalization assessment of lexical and morphosyntactic competence in Jejueo has yielded valuable findings, confirming both the imperiled status of the language and a sizable sampling of the particular deficits that call for remediation. The developmental profile documented here is a classic example of language loss in progress. Each successive cohort of children acquires less of the language than their older peers, thereby becoming less able to use it until, finally, it is no longer a viable tool for communication. If this trend is not reversed, Jejueo will soon disappear. UNESCO will have been proven right, to everyone's regret.

### Abbreviations


AH = addressee honorific,  
 CONT = continuative,  
 SE = sentence ender,  
 PFV = perfective,  
 PROSP = prospective

### References

- Borgia, Melissa. 2009. Modifying assessment tools for Ganöhsesge:kha: Hë:nödeyë:stha – a Seneca culture-language school. In Reyhner, Jon, & Louise Lockard (eds.), *Indigenous language revitalization: Encouragement, guidance and lessons learned*, 191–210. Flagstaff, AZ: Northern Arizona University.
- Corder, Gregory W., & Dale I. Foreman. 2014. *Nonparametric statistics: A step-by-step approach*. Hoboken, New Jersey: John Wiley & Sons.
- Edmonds, Katarina, Ngaere Roberts, Peter Keegan, Waldo Houia, & Hemi Dale. 2013. *The development of Māori oral language proficiency progressions*. Wellington: N. Z. Ministry of Education. <https://www.educationcounts.govt.nz/publication-s/maori/105966/kaiaka-reo-reo-waha-ki-te-motu>.
- Granena, Gisela, & Michael H. Long. 2012. Age of onset, length of residence, language aptitude, and ultimate L2 attainment in three linguistic domains. *Second Language Research* 29. 311–43. doi: 10.1177/0267658312461497.
- Grenoble, Lenore. 2013. Language ecology and endangerment. In Austin, Peter K., & Julia Sallabank (eds.), *The Cambridge handbook of endangered languages*, 27–44. Cambridge: Cambridge University Press.
- Heaton, Raina, & Igor Xoyón. 2016. An assessment of linguistic development in a Kaqchikel immersion school. *Language Documentation & Conservation* 10. 497–521. <http://hdl.handle.net/10125/24716>.

- Housman, Alohalani, Kaulana Dameg, Māhealani Kobashigawa, & James D. Brown. 2011. Report on the Hawaiian oral language assessment (H-OLA) development project. *Second Language Studies* 29(2). 1–59. <http://www.hawaii.edu/sls/wp-content/uploads/2014/09/Housman-et-al.pdf>.
- Kim, Eun-Hee. 2015. *Jeju bangeon-ui eoneowhalyeog pyeongga* (제주방언의 언어활력 평가) [Language vitality assessment of Jeju dialect]. *The Journal of Localitology* 14. 293–324. doi: 10.15299/tjl.2015.10.14.293.
- Moseley, Christopher (ed.). 2010. *Atlas of the World's Languages in Danger*. 3rd ed. Paris: UNESCO Publishing. <http://www.unesco.org/culture/en/endangeredlanguages/atlas>.
- Navajo Nation. 2005. *Native American language and culture certification: Verification by the Navajo Nation Office of standards, curriculum & assessment development*. Santa Fe: N.M. State Public Educ. Dep./Navajo Nation. [https://webcache.googleusercontent.com/search?q=cache:pYdyCHT7zMcJ:https://webnew.ped.state.nm.us/wp-content/uploads/2018/02/NLCC\\_PROCEDURES\\_-\\_VERIFICATION.pdf+&cd=1&hl=en&ct=clnk&gl=kr](https://webcache.googleusercontent.com/search?q=cache:pYdyCHT7zMcJ:https://webnew.ped.state.nm.us/wp-content/uploads/2018/02/NLCC_PROCEDURES_-_VERIFICATION.pdf+&cd=1&hl=en&ct=clnk&gl=kr).
- Peter, Lizette, Ella Christie, Marilyn Cochran, Dora Dunn, Lula Elk, Ed Fields, JoAnn Fields, Tracy Hirata-Edds, Anna Huckaby, Margaret Raymond, Deputy Chief Hastings Shade, Gloria Sly, George Wickliffe, & Akira Yamamoto. 2003. Assessing the impact of total immersion on Cherokee language revitalization: a culturally responsive, participatory approach. In Reyhner, Jon, Octaviana Trujillo, Roberto Luis Carrasco, & Louise Lockard (eds.), *Nurturing native languages*, 7–23. Flagstaff: Northern Arizona University. [https://pdfs.semanticscholar.org/a59b/73e27cec51ab1135d703bed2af12ba2ee92-d.pdf?\\_ga=2.177900645.1561539046.1590905282-1517270989.1590905282](https://pdfs.semanticscholar.org/a59b/73e27cec51ab1135d703bed2af12ba2ee92-d.pdf?_ga=2.177900645.1561539046.1590905282-1517270989.1590905282).
- R Core Team. 2014. *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. <http://www.R-project.org/>.
- Sato, Hiroko. 2016. An assessment of language vitality in Bebeli, an endangered language in Papua New Guinea. Paper presented at the East-West Center Biocultural Colloquium, Honolulu, Hawai'i, 26 October 2016.
- Schwartz, Bonnie D. 2003. Why child L2 acquisition? In van Kampen, Jacqueline, & Sergio Baauw (eds.), *Proceedings of generative approaches to language acquisition* 2003. 47–66. Utrecht, Netherlands: LOT Occasional Series. <http://dspace.library.uu.nl/handle/1874/295926>.
- Sheskin, David J. 2003. *Handbook of parametric and nonparametric statistical procedures*. 3rd edn. Boca Raton: Chapman & Hall/CRC. doi: 10.1201/9781420036268.
- Yang, Changyong, William O'Grady, & Sejung Yang. 2017. *Jejueo* 1. Seoul: Kyobo PubPle.
- Yang, Changyong, William O'Grady, & Sejung Yang. 2017. Toward a linguistically realistic assessment of language vitality: The case of Jejueo. *Language Documentation & Conservation* 11. 103–113. <http://hdl.handle.net/10125/24727>.
- Yang, Changyong, Sejung Yang, & William O'Grady. 2020. *Jejueo: The Language of Korea's Jeju Island*. Honolulu: University of Hawai'i Press.

- Yang, Changyong, William O'Grady, Sejung Yang, N. Hilton, S. Kang, & S. Kim. 2019. Revising the language map of Korea. In Stanley. D. Brunn & Roland Kehrein (eds.), *Handbook of the Changing World Language Map*, 215–229. Berlin: Springer. Available at: <https://changingworldlanguagemap.weebly.com/>.
- Yang, Sejung. 2018. Assessing language knowledge in Jejueo: vocabulary and verbal patterns in Jejueo and English. PhD dissertation. University of Hawai'i at Mnoa.

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## Appendix A – Full list of vocabulary test items

(English glosses are for the sake of the reader; they were not present in the test materials.)

Domain	Jejueo (45 tokens)	Gloss
Kinship terms (6 tokens)	<i>haleubang</i>	grandfather
	<i>halmang</i>	grandmother
	<i>abang</i>	father
	<i>eomeong</i>	mother
	<i>seong</i>	older brother
	<i>asi</i>	younger sibling
Nature words (6 tokens)	<i>nang</i>	tree
	<i>gojang</i>	flower
	<i>sanggoji</i>	rainbow
	<i>badang</i>	sea
	<i>teyeog</i>	grass
	<i>mosal</i>	sand
Animal names (6 tokens)	<i>gonengi</i>	cat
	<i>jwingi</i>	mouse
	<i>dosegi</i>	pig
	<i>malchug</i>	grasshopper
	<i>gawlgaeabi</i>	frog
	<i>geyeomji</i>	ant
Food terms (6 tokens)	<i>mulkkuleog/mungge</i>	octopus
	<i>bomal</i>	gastropod
	<i>gingi</i>	crab
	<i>nawmppi</i>	onion
	<i>dawgsegi</i>	egg
	<i>jisilljiseul</i>	potato
Descriptive Verbs (5 tokens)	<i>geomeonghawda</i>	black
	<i>heoyeonghawda</i>	white
	<i>jjawlleuda</i>	short
	<i>jilda</i>	long
	<i>jogda</i>	small
Body parts (6 tokens)	<i>dugji</i>	shoulder
	<i>se</i>	tongue
	<i>dawgmawlawb</i>	knee
	<i>kkwang</i>	bone
	<i>yagaegi/mogaji</i>	neck
	<i>yangji/naws</i>	face

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Domain	Jejueo (45 tokens)	Gloss
Household terms (5 tokens)	<i>gawse</i>	scissors
	<i>banong</i>	needle
	<i>bichilag</i>	broom
	<i>chalong</i>	basket
	<i>swette</i>	key
Action words (5 tokens)	<i>dekkida</i>	throw/toss
	<i>gawsda</i>	cut
	<i>simda</i>	hold
	<i>belida</i>	see
	<i>mundeulida</i>	drop

Although the original test included fifty vocabulary items, five vocabulary tokens were eliminated in the final analysis for two reasons. First, native Jejueo speakers confirmed that 4 items were identical to their Korean counterparts, making it impossible to know whether a correct response reflected knowledge of Korean or knowledge of Jejueo. Second, the picture for one of the target items (“cupboard”) was confusing to the participants. Because it also depicted plates and cups, many of the younger test takers (Elementary School to College groups) named those objects rather than the cupboard. For this reason, item #86 was eliminated from the analysis. For the sake of comparison, the corresponding five items were also removed from the analysis of the English test results.

Eliminated vocabulary items

Item number	Jejueo	Gloss
# 23	<i>bulgda/keuda</i>	big
# 68	<i>twida /ttwida</i>	jump
# 72	<i>dekkeuda/milda</i>	close/push
# 73	<i>beollueda/sseolda</i>	divide in half/cut
# 86	<i>salle</i>	cupboard



## Appendix B – Sample test items from the verbal pattern task

(English translations are used here for the sake of exposition; they were not present in the test materials.)<sup>B-8</sup>

Instruction: 질문에 알맞은 답을 그림을 보면서 영어로 쓰시오. 철자가 틀려도 괜찮습니다.  
‘Look at the question, and write the best response in English.’ ‘Spelling mistakes are okay.’

### 1. Ongoing events (6 items)

Question: 지호 지금 뭐해? ‘What is Jiho doing now?’



Target response:  
*Nang singg-eoms-jeo.*  
tree plant-CONT-SE  
‘(He) is planting a tree.’

### 2. Completed events (6 items)

Question: 수호는 어제 무엇을 했어? ‘What did Suho do yesterday?’



Target response:  
*Gwegi nakk-as-jeo.*  
fish catch-PFV-SE  
‘(He) caught a fish.’

### 3. Conjectured Events (6 items)

Question: 배가 고픈 민호가 맛있는 오메기떡(케)을 바라보고 있어, 곧 어떻게 되겠니?  
‘Hungry Minho is looking at the delicious *omegitteok* (Jejueo)/cake (English). What will happen next?’



Target response:  
*Meog-euk-yeo.*  
eat-PROSP-SE  
‘(He) will eat.’



## 4. Ongoing events in the past (6 items)

Question: 5분전에 방에 갔을 때, 소라 뭐하고 있었어? ‘When you went to Sora’s room 5 minutes ago, what was she doing?’



Target response:  
*Cheg ig-eoms-eon.*  
book read-CONT-PFV.SE  
‘(She) was reading a book.’

## 5. Yes/No Questions (6 items)

Instruction: 친구 유리에게 질문하듯이 물어보세요.  
‘Here is your friend, Yuri.  
Ask her about each person given below.’



Yuri

Question: 현우가 농부인지 물어봐. ‘Ask whether *Hyeonwoo* is a farmer.’



Target response:  
*Nongbani-ga?*  
farmer-SE  
‘(Is he) a farmer?’

## 6. Deference (12 items – 6 action verbs and 6 stative verbs)

Instruction: 그림을 보고 어른에게 말하듯이 제주어로 답하세요.

‘Answer the question as if you are talking to the elderly people(in the picture) in Jejuo.’



Question: 순자는 무엇을 하고 있어요? ‘What is Sunja doing?’



Target response:  
*Dawl-ams-u-da.*  
run-CONT-AH-SE  
‘(She) is running.’

Question: 신발 크기가 어때요? What is the shoe size like?



Target response:  
*Jog-su-da.*  
 small-AH-SE  
 '(It is) small.'

### Appendix C – Results on the vocabulary test by the adult participants

The following table provides information about the proportion of correct responses by a group of 51 adults, including the 31 who participated in the test; a score of 1 would indicate that every participant responded correctly (Yang, 2018).

As shown here, all the participants produce the word for 'pig' and 90% of the adult participants were able to produce the word *emphgonengi* 'cat' (proportion correct= .9). The item that yielded the lowest result in the entire vocabulary test was J09 (*sanggoji* 'rainbow'), which only 1% of the participants were able to produce.

Item	Word	Adult (n= 51)
J45	<i>dosegi</i> 'pig'	1
J01	<i>haleubang</i> 'grandfather'	0.98
J02	<i>halmang</i> 'grandmother'	0.98
J03	<i>abang</i> 'father'	0.98
J04	<i>eomeong</i> 'mother'	0.98
J10	<i>badang</i> 'sea'	0.98
J35	<i>dogsegi</i> 'egg'	0.94
J36	<i>jiseul</i> 'potato'	0.92
J43	<i>gonengi</i> 'cat'	0.9
J32	<i>bomal</i> 'gastropod/seasnail/periwinkles'	0.88
J07	<i>nang</i> 'tree'	0.86
J12	<i>mosal</i> 'sand'	0.86
J34	<i>nawmppi</i> 'radish/turnip'	0.86
J21	<i>jjolleuda</i> 'short'	0.84
J24	<i>jolda</i> 'small'	0.8
J33	<i>gingi</i> 'crab'	0.8
J81	<i>gawse</i> 'scissors'	0.8

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Table 7. Continued from previous page

Item	Word	Adult (n= 51)
J20	<i>heoyeonghawda</i> 'white'	0.78
J19	<i>geomeonghawda</i> 'black'	0.76
J71	<i>belida</i> 'see'	0.71
J31	<i>mulkkuleog/mungge</i> 'octopus'	0.69
J58	<i>kkwang</i> 'bone' <i>kkwang</i> 'bone'	0.69
J05	<i>seong</i> 'older brother'	0.67
J44	<i>jwingi</i> 'mouse'	0.65
J59	<i>yagaegi/mogaji</i> 'neck'	0.65
J67	<i>dekkida</i> 'throw/toss'	0.63
J82	<i>banong</i> 'needle'	0.61
J83	<i>bichilag</i> 'broom'	0.55
J06	<i>asi</i> 'younger sibling', <i>nui</i> 'younger sister'	0.53
J69	<i>gawsda</i> 'cut'	0.49
J84	<i>chalong</i> 'basket'	0.49
J56	<i>se</i> 'tongue'	0.47
J70	<i>simda</i> 'hold'	0.47
J48	<i>geyeomji</i> 'ant'	0.43