

Toward a linguistically realistic assessment of language vitality: The case of Jejueo

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The assessment of language endangerment requires accurate estimates of speaker populations, including information about the proficiency of different groups within those populations. Typically, this information is based on self-assessments, a methodology whose reliability is open to question. We outline an approach that seeks to improve the accuracy of self-assessment by exposing participants to a simple linguistic task before they render their judgments. The viability of the approach is evaluated with the help of a case study involving 81 partial speakers of Jejueo, a critically endangered Koreanic language.

1. Introduction¹ A variety of metrics have been proposed for assessing a language’s degree of endangerment – the UNESCO system (2003), the Graded Intergenerational Disruption Scale (GIDS; Fishman 1991), the Extended Graded Intergenerational Disruption Scale (E-GIDS; Lewis & Simons 2010), and the Language Endangerment Index (LEI; Lee & Van Way 2016), among others. A key component of these and other systems is the need for accurate estimates, both of the number of speakers and of their fluency in the language. This raises an obvious question: where does this information come from, and how dependable is it?

This issue is rarely addressed, although it is recognized to be problematic (e.g., Grenoble 2013: 28 and the references cited there). Organizations such as Ethnologue, UNESCO and the Catalogue of Endangered Languages² rely on two principal sources

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²Ethnologue: <https://www.ethnologue.com/>, UNESCO Atlas: <http://www.unesco.org/languages-atlas/>, Catalogue of Endangered Languages: <http://www.endangeredlanguages.com/lang/region>

of information for their estimates: census data and fieldworker reports. Crucially, both sources depend heavily on self-assessments by individual speakers in response to queries about their language use and proficiency. This is potentially problematic for two very different reasons.

First, individuals can differ in their views about what it means to speak or understand a language. Does it suffice to be able to exchange greetings and pleasantries? Is it enough to be able to engage in basic every-day conversations that make few demands on the language's lexical and morphosyntactic resources? What about fluency in a "mixed" variety that is substantially different from the traditional language but goes by the same name? These and other factors could easily shape self-assessments of proficiency in unexpected and undesirable ways, ultimately contributing to a skewed picture of a language's status.

A second problem is noted by Grenoble (2013). In responding to queries about proficiency, speakers could be swayed by extraneous factors involving their attitude and that of others to the language in question. On the one hand, speakers might be tempted to overstate their proficiency in order to emphasize their sense of belonging to a particular ethnic group, consistent with the well-known fact that language is a major marker of identity and group membership. 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." On the other hand, people may sometimes choose to *understate* their proficiency in order to minimize their association with a linguistic or ethnic group that is traditionally the victim of prejudice and discrimination. "When people are repressed for their ethnicity," Grenoble notes, "they may claim not to know that particular language for fear of retribution." We return to these points in Section 4.

Concern over the accuracy of estimates of language proficiency has been expressed in other quarters as well. In its 2016 report on the language data in the U.S. Census, the Commission on Language Learning of the American Academy of Arts and Sciences (AAAS) urges further study of whether people who reported proficiency in particular languages can actually use them effectively (AAAS 2016: 20). The Commission underlines its concern by noting that "research from outside the federal government" suggests that the most recent census overestimated the number of bilinguals in the U.S. by a factor of two (AAAS 2016: 4).

We outline here a methodology that seeks to take a first step toward the elicitation of self-assessments that more accurately reflect a speaker's actual level of linguistic proficiency. We begin, in the next section, by outlining the technique and illustrating its application to Jejueo, a critically endangered Koreanic language. Section 3 offers evidence that the method is more accurate than a simple request for a self-assessment of proficiency. We present some general concluding remarks in Section 4.

2. The self-assessment of proficiency in Jejueo Jejueo is the traditional language of Jeju Island, a province of Korea located about 45 miles south of the Korean mainland. According to the *Catalogue of Endangered Languages* (2016), there are between 5,000 and 10,000 speakers of varying proficiency on Jeju Island, as well as (to

a lesser extent) on the Korean mainland, in Japan, and in a few other countries as part of the Korean diaspora. Fully fluent speakers are for the most part elderly (in their 70s and 80s), and children are no longer learning the language. Adults aged 20 to 60 show varying degrees of partial proficiency.

We initially worked with a total of 65 participants, aged 20 to 29, all life-long residents of Jeju Island and all fully fluent and literate in Korean, their dominant language. We chose participants in this age range because they are part of the pivotal generation of Jeju Islanders on whose shoulders the perilous future of the language rests.

We began by conducting a traditional language survey that included a request to the participants to rate their comprehension ability on a five-point scale, with 1 representing low ability and 5 indicating high proficiency. The average rating, across all participants, was 3.13, indicating an intermediate level of skill.

Next, we had each participant listen to 10 recorded Jejueo sentences, including the five sample items that appear in translated form below. A complete list can be found in the appendix, along with a list of sample Korean translations.

1. A small bird holding a big pumpkin seed in its mouth was flying around.
2. You break this long stick into two pieces.
3. If the weather is fine, climb up a tree, pick fruit and throw it to the ground.
4. Because s/he lives near her/his mother, s/he doesn't know how large the world is.
5. Father is patting his back with a thin stick to knock off the stuck sand.

All sentences instantiated a set of monoclausal and biclausal constructions of varying complexity and frequency of usage. However, in order to ensure that the sentences were not too difficult and would not overburden the working memory of participants, the test sentences were composed of basic vocabulary items, mostly from the Swadesh list, inflected and arranged in ways typical of Jejueo speech. Grammatical markers (nominal and verbal suffixes and connectives) were drawn from the inventory of markers discussed in the authors' forthcoming grammar of Jejueo; most also appear in the authors' forthcoming four-volume Jejueo textbook, which is intended for use in first- and second-year courses in the language and therefore focuses on the most basic features of grammar.

Each Jejueo sentence was pronounced twice in the recording – once by a male speaker and once by a female speaker, both of whom were in their seventies and highly fluent. In accordance with the experimenter's instructions, participants paraphrased each sentence in written Korean (their dominant language) right after hearing it – a task that draws heavily on their comprehension skills. After completing all ten test items, they were once again asked to rate their ability to understand Jejueo on a scale of 1 (low) to 5 (high). On average, self-assessments fell by 1.10 points, from a pre-test mean of 3.23 to 2.13. The difference between the two scores was highly significant ($t(126.46) = 5.47, p < .0001$).

Table 1. Self-assessment scores before and after the comprehension test

Before	After	Mean difference
3.23	2.13	-1.1

Of the 65 participants, 43 adjusted their proficiency estimate downward; only three exhibited the reverse pattern.

These results suggest that many participants initially over-estimated their ability to understand Jejuo, but that they were able and willing to adjust their self-assessment once they realized their mistake, thanks to the comprehension task. But a crucial question now arises: can we be sure that the “right” people lowered their self-assessment? The answer to this question depends on whether there is a relationship between performance on the comprehension task, on the one hand, and the likelihood of a lowered self-assessment, on the other. We address this issue in the next section.

3. Reliability In order to get at the question of whether participants’ performance on the translation task directly contributed to their revised self-assessment, we first had to develop a measure of their comprehension success. We did this by analyzing their Korean translations of the Jejuo sentences and assigning one point for each noun, verb, and verbal suffix that was correctly rendered, thereby arriving at a “percentage correct” score for each participant. This was a relatively straightforward matter for the two languages that are the focus of our study. As can be seen by comparing the sample Korean translations with the Jejuo test items in the appendix, the two languages are closely related, with similar word order and verbal structure (not unlike, say, Italian and Spanish or Norwegian and Dutch). As the following example helps illustrate, these parallels made it quite easy to identify missing or incorrect nouns, verbs and suffixes in the Korean translations. (NPFV = non-perfective, TOP = topic, NOM = nominative, CLAS = classifier, SE = sentence ender)

Jejuo: I ji-n magdeng.i-lang neu-ga du gae-lo kkeuchi-la.
 Korean: I gi-n magdegi-neun ne-ga du gae-lo kkeunh-eola
 this long-MOD stick-TOP you-NOM two CLAS-into break-SE
 ‘You, break this long stick into two pieces.’

Our next step was to see whether there was a relationship between participants’ scores and adjustments in their self-assessments. We were particularly interested in whether the 28 participants who initially gave themselves a high self-assessment (a 4 or a 5) and then lowered it by at least two points had poorer comprehension scores than participants who maintained their high self-assessment. Table 2 summarizes the average comprehension scores for the two groups.

Our results show the hoped-for relationship. Participants who maintained their high initial self-assessment had comprehension scores that were on average 19.61 percentage points higher than those of participants who initially gave themselves a

Table 2. Average score on the comprehension test

Participants who maintained a high self-estimate (n=7)	Participants who lowered a high self-estimate (n=16)
67.04%	47.43%

high self-assessment and then lowered it. In other words, the comprehension test appears to have encouraged less proficient participants to adopt a more realistic view of their linguistic ability – a desirable result.

Now a new question arises: would a *strong* performance on the comprehension task lead to an *upward* adjustment in speakers who had initially been overly modest in their self-assessment? Only three of our 20-year-olds raised their self-assessment after the comprehension task – far too few to draw any conclusions. In order to address this question, we therefore extended our study to include 20 middle-aged participants in the 40- and 50-year-old range. As summarized in Table 3, their initial self-assessments were quite modest – the average estimate was just 3.55.³ However, after the comprehension task, 18 of the participants raised their self-assessment to either 4 or 5, yielding a mean estimated proficiency level of 4.75, which is significantly higher than their pre-test rating of 3.55 ($t(9) = -9; p < .0001$).

Table 3. Self-assessment scores of middle-aged speakers before and after the comprehension test

Before	After	Mean difference
3.55	4.75	+1.20

Can the higher self-assessments be linked to the participants' performance on the comprehension test? The answer appears to be yes: the 18 (of 20) participants who raised their self-assessment had an average score on the comprehension task of 90.6%.

These findings offer a potentially important insight into the status of Jejuo. Our initial request for a self-assessment revealed little difference between the 20-year-old and middle-aged residents of Jeju Island, with each group estimating an intermediate level of proficiency (3.23 and 3.55, respectively, on a five-point scale). This near-parity might be interpreted as evidence that there has been relatively little change in the status of Jejuo over a generation. In fact, however, the initial self-estimates are very misleading, as the results summarized in Table 4 reveal.

As can be seen here, the second round of self-assessments, which followed the comprehension task, indicates that the younger speakers had consistently over-estimated their proficiency while the middle-aged speakers had initially under-estimated theirs.⁴

³Although only modestly higher than the mean initial self-assessment by the younger participants (3.13), the difference is significant ($t(37.66) = -6.56, p < .0001$).

⁴It is also interesting to note that the younger participants seem to measure themselves against a lower standard than do the older speakers. The average comprehension score for the 20-year-olds who maintained a high self-assessment in the second round was 67.04%, compared to 90.6% for the middle-aged participants.

Table 4. Comparison of self-assessment scores of younger and middle-aged speakers before and after the comprehension test

Group	Before	After
Younger	3.23	2.13
Middle-aged	3.55	4.75

The correlation between the participants' performance on the comprehension task and their post-test self-assessment score was $r = .82$ ($p < .000$), compared to $r = .47$ ($p < .000$) for the pre-test self-assessment. The difference between the two correlations, assessed using Fisher's r to z transformation, was significant ($z = -4.14$, $p < .000$). In other words, exposure to a language-related activity (comprehension and translation) had the effect of bringing participants' self-assessment more in line with their actual proficiency. Results of this sort point the way toward correcting what would otherwise be a very distorted view of the linguistic situation on Jeju Island – and perhaps elsewhere as well.

4. Discussion By incorporating a comprehension task into our self-assessment questionnaire, we sought to alleviate two problems that compromise estimates of speaker numbers and proficiency. On the one hand, we wanted to make it clear to participants that understanding a language involves the ability to comprehend sentences consisting of multiple words, inflected and arranged in ways typical of the speech of fluent speakers. On the other hand, we wanted to give participants a realistic opportunity to judge their abilities in a situation where they had to draw on their linguistic skills rather than simply imagine their effectiveness. Our study points to two findings.

First, partial speakers of Jejueo can and do evidently misestimate their proficiency, a fact that calls into question the accuracy of speaker-population data that relies largely or solely on self-assessments. It is not entirely clear what the basis for this misestimation is. On the one hand, there has been a renewed awareness on Jeju Island of the importance of Jejueo to the community's culture and identity, creating a possible incentive for the participants in our survey to exaggerate their linguistic proficiency. On the other hand, our observations suggest that there is also confusion over exactly what Jejueo is, with some residents of Jeju Island equating it with the local variety of Korean (which contains some Jejueo words) rather than with the Island's traditional language. As noted at the outset, it is precisely these sorts of factors that make it unwise to rely solely on self-assessments for information about language proficiency and usage.

Second, and more encouragingly, our findings suggest that the effect of speaker misestimations, whether deliberate or accidental, can be reduced by exposing participants in language proficiency surveys to samples of the language before they are asked to estimate their proficiency in it. It remains to be seen how and whether this methodology can be extended beyond the particular case studied here.

As a reviewer notes, Jejuo is quite closely related to Korean and, for historical reasons, is even considered by some to be a dialect of Korean. In fact, however, the mutual intelligibility of the two languages is low, as shown by Yang et al. (to appear), and monolingual speakers of Korean who are exposed to it quickly acknowledge that they find it incomprehensible. Still, it is appropriate to ask whether the particular method employed here will be helpful in the case of pairs of languages that are unrelated to each other, where translation might not be an appropriate or straightforward means for assessing comprehension.

Another concern involves the community's culture. Because all Koreans attend an exam-oriented school system for twelve years, they are used to taking tests and quickly acknowledge the implications of not being able to answer questions. Different attitudes might well prevail in other cultures, leading participants to resist a lower self-assessment even where their performance might call for it. In fact, though, this possibility actually makes use of a technique such as ours all the more important: researchers should exercise caution in interpreting high self-assessments that are not supported by a correspondingly strong performance on a linguistic task.

Finally, it is important to recognize that the particular type of task that we employed here is not crucial for our proposal. Our central thesis is that having participants engage in a linguistic activity involving the target language right before estimating their proficiency increases the chances of an accurate self-assessment. We used a written translation task because it offered a simple and practical comprehension-related activity for the particular population with which we were working. In cases where the population is not literate, an oral task would presumably be called for, possibly even an oral translation or paraphrase task. However, a production task, such as describing the events depicted in a series of pictures or a video (e.g., the Pear Story) might work just as well, or even better. (The literature on language acquisition contains many examples of assessment tasks; see, e.g., Blom & Unsworth 2010 and Hoff 2011.) These are all matters that call for further study if we hope to improve our understanding of the true state and status of languages in communities around the world.

5. Concluding remarks In sum, work on language documentation and revitalization requires accurate information about the proficiency levels of different groups of speakers. By drawing on techniques that supplement traditional self-assessment surveys with tasks that require actual language use (comprehension, and perhaps even production), it may be possible to obtain more accurate and more useful estimates of language vitality than would otherwise be possible. The technique that we have described offers one way to go about doing this, but our intent is not to suggest that it is the only way to approach the challenge of assessing language proficiency and language usage. Rather, our goal here has been to open a conversation on this matter, in the hope that the problem will be taken seriously and that attention will be given to developing a variety of strategies for dealing with it.

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Appendix: List of test items

Note: The system of Romanization employed here is the one recommended by the National Institute of the Korean Language for works of linguistic analysis.

- (1) Hawkkeullakhaw-n saeng.i-ga keu-n hobag-ssi gulle gawdeug
 small-MOD bird-NOM big-MOD pumpkin-seed mouth fully
 mul-eon nawladeng.gy-eoms-eon-ge
 bite-CON fly.around-CONT-PFV-SE
 ‘(I saw that) a small bird with a big pumpkin seed in its mouth was flying
 around.’

Sample Korean translation:

Jag-eun sae-ga keun hobag-ssi-leul iban gadeug mulgo nala danigo issdeola.

- (2) I ji-n magdeng.i-lang neu-ga du gae-lo kkeuchi-la.
 this long-MOD stick-TOP you-NOM two CLAS-into break-SE
 ‘You, break this long stick into two pieces.’

Sample Korean translation:

I gi-n magdegi-neun ney-ga du gae-lo kkeunh-eola.

- (3) Nalsee joh-geodeullang nang-e oll-ang yawleum dawng.gy-eong
 weather good-CON tree-at climb-CON fruit pull-CON
 ttang-deule dekki-la.
 ground-toward throw-SE
 ‘If the weather is fine, climb up the tree, pick fruit and throw (it) to the ground.’

Sample Korean translation:

Nalssiga johgeodeun namue olla, yeolmaeleul ttaseo ttan-eulo deonjeola.

- (4) Gai-n eomeong jawkkawsdwi sal-abunan swisang neoleu-n jul-eul
 3.PERS-TOP mother near live-CON world wide-MOD truth-ACC
 moll-ams-ik-yeo.
 not.know-CONT-PROSP-SE
 ‘Because (s)he lives near his/her mother, (s)he doesn’t know how large the world
 is.’

Sample Korean translation:

Geu aeneun eomma yeope salaseo sesang neolbeun jul-eul moleugo issgessne.

- (5) Abang-eun gawneu-n mongdeng-ilo deung.eoli but-eun mosal teol-jen
 father-TOP thin-MOD stick-INSTR back stick-MOD sand dust.off-CON
 tawktawk ttawly-eoms-in-ge.
 beating.sound beat-CONT-NPST-SE
 ‘Father is patting his back with a thin stick to knock off the stuck sand.’

Sample Korean translation:

Eoppaneun ganeun mongdungilo dunge buleun molaeleul teollyeogo togtog dudeuligo issne.

- (6) Neu-ne-lang eomeong-sindi mul awjeong.ga-ng mawn deuleussa-b-seng
 you-PL-CON mother-to water bring-CON all drink-AH-CON
 gawl-eula-bo-jyeo
 tell-SE-see-PROSP.SE
 ‘You guys should bring water to your mother and ask her to drink it all.’

Sample Korean translation:

Jeo hwideuleun eommaege muleul gajigogaseo deusilago malhaebwala.

- (7) Hawssawl i-pen-deule w-ang gae kkolleng.i heung.geu-neun geo
 a.little.bit this-side-to come-CON dog tail wag-MOD thing
 belyeobo-ju-maneun.
 look-SE-CON
 ‘Why don’t you come to this side and watch the dog wagging his tail.’

Sample Korean translation:

Jogeum ijogeulo waseo gaega kkoli heundeuneun geosjom chyeodaboji.

- (8) Heyeonghaw-n dol-lang nawdanchak-deole noh-a-bul-gog,
 white-MOD stone-TOP right.side-to put-LV-COMPL-CON
 geomeonghaw-n geol-lang i-le dawng.gi-len haw-la.
 black-MOD thing-CON this.side-to pull-CON do-SE
 ‘Place the white stone on the right side and pull the black stone to this side.’

Sample Korean translation:

Hayan doleun oleunjjogpyeone nohgo, keomeun doleun ijogeulo olmgilago haela.

- (9) O-dang bely-eo-bo-nan saleum-deol-eun molleu-n sonang-kkeobdegi
 come-CON look-LV-see-CON person-PL-TOP dry-MOD pine.tree-bark
 sawlm-eong, dawgsegi sogom-e jjik-eong meog-eoms-eon-ge.
 burn-CON egg salt-into dip-CON eat-CONT-PFV-SE
 ‘On the way, (I saw) people burning dried pine tree bark and eating eggs with salt.’

Sample Korean translation:

Odaga boni salamdeuli maleun sonamu kkeopjileul taemyeonseo, gyelaneul sogeume jjigeo meokko issdeola.

- (10) Abang-eun sanawng-haw-leo ga-s-dan beyeom-e sui bas-dui-na
 father-TOP hunt-do-CON go-PFV-CON snake-by three place-place-even
 mul-li-gog yagaegi-do gasi-e sildegi-yeon jali-e deuleonuw-eos-den-massim.
 bite-PASS-CON neck-too thorn-to graze-CON sick.bed-at lie.down-PFV-CON-AH.SE
 ‘I heard that while father was on hunting, he was bitten by a snake three spots
 (on his body) and he scratched his neck with a thorn and now he is in his sick
 bed.’

Sample Korean translation:

Appaneun sanyanghaleo gassdaga baeme se gundena mulligo, mogdo gasie geulghyeo seo jalie nuweosdago haeyo.