

Building tools for assessing linguistic vitality

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Issues

- Field of language endangerment studies has grown rapidly over 20 years
- Methodology has not kept pace
 - characterizations of language endangerment scenarios and speaker ability are often ad hoc
 - little common use or understanding of terminologies
- Lack of comparability across languages

Assessing language endangerment

Researchers draw on a range of different factors, such as:

- domains of language use
- language transmission
- size of speaker community
- range of linguistic resources, e.g.
 - speech levels, ritual language
- grammatical restructuring
- speaker fluency

Terminological issues

Classifying speaker fluency

- strong, fully competent, or fluent speaker
- older fluent speaker
- younger fluent speaker
- imperfect speaker
- semi-speaker
- rememberer
- terminal speaker
- word-inserter
- passive (and near-passive) bilingual

Classifying speech communities

- healthy, strong
- shifting
- threatened
- endangered
- moribund
- obsolescent, extinct

Terminological issues

- How useful are these terms?
- What do we understand by them?
- Where is the boundary between them?
 - e.g. shifting vs. threatened vs. endangered
- What does it mean, for example, to be a "near passive bilingual"?
- How do we compare speaker fluency in relation to grammatical innovations and emerging varieties?

Goals - testing linguistic vitality

Develop a standardised tool to

- gain an informed overview of linguistic vitality in a site based on empirical data rather than less formal tools (survey, self-reporting or observation)
- learn how linguistic ability varies in and between communities: e.g.
 - age / generations, gender, religious affiliation, special roles
- permit comparisons of linguistic vitality between sites
- assess intergenerational transmission of linguistic and other indigenous knowledge

Linguistic uses

Test data provide a comparative cross-linguistic database for

- sociolinguistic analyses of language shift and language variation
- typological analyses of linguistic features
- historical-comparative analyses of linguistic relatedness and language change

Community uses

Community and researchers can draw on the findings to

- provide feedback to the wider community
- raise community awareness of language vitality and language shift / loss
- assess language maintenance needs
- develop appropriate language learning materials
- request funding and support from local agencies

Linguistic diversity in Maluku



42 Austronesian languages are spoken on 14 islands in the geopolitical region of central Maluku in Maluku Province

Four research languages

The research team has been working with four ethnolinguistic communities in central Maluku which vary across a range of features:

- geography
 - urban, coastal, mountainous interior
- demography
 - populations range from 200 - 19,000
- religion
 - both Muslim and Christian villages
- linguistic vitality
 - ranges from strong to moribund

Four research languages

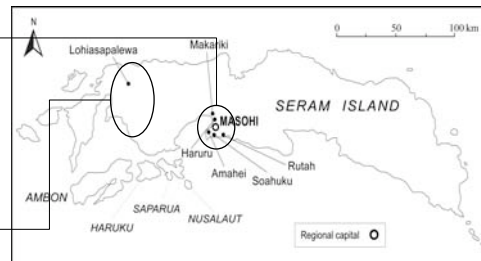
SERAM ISLAND

Rutah [AMQ]

- Researcher: Margaret Florey
- Language indigenous to — Rutah (Muslim), Amahei, Soahuku, Makariki, Haruru (?) (Christian)
- Rutah population 2,286

Alune [ALP] (Lohiasapalewa)

- Researcher: Margaret Florey
- Language indigenous to — 26 Alune villages (all Christian)
- Total population ~15,000
- Lohiasapalewa population 298



Four research languages

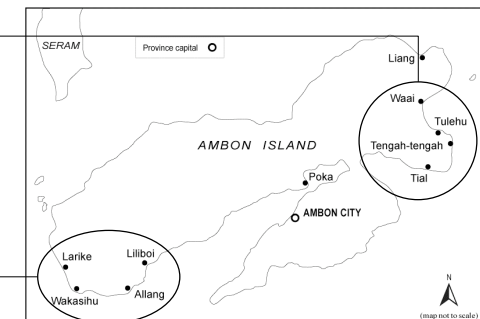
AMBON ISLAND

Sou Amana Teru [TLU]

- Researcher: Simon Musgrave
- Language indigenous to — Tulehu, Tial, Tengah-tengah (Muslim), Waai (Christian)
- Population 18,790 in Tulehu, Tial, Tengah-tengah

Allang [ALO]

- Researcher: Michael Ewing
- Language indigenous to — Wakasih and Larike (Muslim), Allang and Liliboi (Christian)
- Allang population 4,113



Language vitality test

Methodology and the 3 test components

Test components

1. Lexical recognition
 - 5 photo sets
 - designed to test receptive ability in the target language (TL)
 - no productive language skills are necessary
 - total 53 test items
 - first three sets test recognition of common nouns
 - 4th and 5th sets test comprehension of simple sentences
2. Translation sentences
 - 3 sets
 - designed to test productive ability in TL
 - translation from Ambonese Malay to TL
 - total 75 translation sentences
3. Discourse
 - designed to test creative ability in TL

Assessing linguistic vitality

- Realistic assessments of linguistic vitality take time!
- We allow about 1 hour per respondent
- Step 1: Lexical recognition
 - approximately 30-45 minutes per respondent
- Step 2: Translation task
 - in Lohiasapalewa, task took from 7 minutes for older fluent speakers to 25 minutes for youngest speakers (primary school age)
- Step 3: Discourse task
 - approximately 15 minutes per respondent

Community language workers

Research team includes community language workers (CLWs) in each site:

- selected in consultation with the community
- work in apprenticeship with the linguist and with language speakers
- trained in documentation methodologies — data collection, transcription, materials production

Preliminary work

Linguist

- records descriptions of the lexical recognition items in the TL with fluent speakers

Community language workers

- map the village and number each house
- select
 - adult test population: e.g. from every 5th house
 - child test respondents from the class roll (e.g. every 4th girl, etc.)

Mapping Rutah village (Seram Island)



Sampling: minimum test population per site

Generation	Adults	Female	Male	Total
G1	50 years +	3	3	6
G2	30-50 years	3	3	6
G3	18-30 years	3	3	6
	Sub-total	9	9	18
	Young people			
G4a	Senior High Yr. 11 (SMA2) (av. age 16)	3	3	6
	Junior High Yr. 8 (SMP2) (av. age 13)	3	3	6
G4b	Primary school Yr. 4 (SD4) (av. age 9)	3	3	6
	Sub-total	9	9	18
	TOTAL	18	18	36

1. Lexical recognition

This task allows us to

- learn if/how receptive linguistic ability varies according to factors such as age, gender, religious affiliation
- determine if and in which generation transmission failure (linguistic tip) has taken or is taking place
- identify language shift
- compare and map broad differences in linguistic vitality between language communities
- begin to demarcate speaker and non-speaker populations

Lexical recognition methodology

- First photo set is displayed in front of the respondent
- In Ambonese Malay, CLW explains the content of each photo
- CLW plays taped description in target language of first item
- Respondent listens to the description and selects a photo which matches it
- Researcher notes response
- Procedure continues through 1st set, and then through next 4 sets of photos

Example lexical recognition items



Example lexical recognition items



Example lexical recognition items



Rutah — Vitality test respondents
in homes and school



Rutah — Vitality test respondents in homes



Lohiasapalewa — Vitality test respondents
in homes and school



2. Translation task

- A more sophisticated tool which allows us to
 - learn if/how productive linguistic ability varies
 - identify linguistic similarities and differences between the speakers
 - analyse grammatical restructuring
 - map conservative and emerging linguistic varieties

Translation task methodology

CLW	explains the translation task
CLW	reads or plays recording of 1st test sentence in Ambonese Malay
Respondent	attempts translation into target language
CLW	may prompt respondent with contextual clues for a lexeme
Respondent	if reasonably confident with the first translation set moves on to translation set 2 and then on to translation set 3

Translation task instructions

Speaker	Ambonese Malay	English
BL	Jadi beta ada bicara dengan siapa?	So who am I speaking with?
KM	Kristofer.	Kristofer.
BL	Kristofer. Kristofer kalau katorang bilang dalam bahasa Indonesia begini, terus Kristofer bilang akan dalam bahasa Alune ya?	Kristofer. Kristofer, if we say something like this in Indonesian, then Kristofer says it in Alune, yeah?
KM	Iya.	Yeah.
BL	Oke.	Okay.

Example translation task sentences

Ambonese Malay	English
Beta lapar.	"I'm hungry."
Beta pigi di kebun.	"I went to the garden."
Dia sudah pi di air.	"She has gone to the river."
Beta makan papeda dingin.	"I ate cold sago porridge."
Beta seng makan kusu.	"I don't eat cuscus."
Katong pung papa ada tidur.	"Our father is sleeping."
Jang menaggis!	"Don't cry!"
Beta pi di _____ untuk jual pisang.	"I went to _____ to sell bananas." [insert name along coast in Y direction]
Dia pulang dari _____.	"She came home from _____." [insert name in upwards direction]
Dong cari durian di gunung.	"They're looking for durian in the mountains."
Dia naik pohon kelapa yang tinggi.	"She climbed a tall coconut tree."
Dia keku kayu satu ikat yang besar.	"She carried a large bundle of wood on her head."
Bapak ambil kayu untuk bikin tempat tidur.	"Father fetched wood to make a bed."

Translation task

- On the basis of our testing experience, respondents who correctly identified $\geq 66\%$ (35/53) of the items on the recognition task were considered able to move on to task 2
- Three sets of translation sentences, each with 25 sentences which increase in complexity
- Sentences test for productive knowledge of the lexicon and of various grammatical constructions: e.g.
 - pronoun paradigm, predicate types, possession, negation, questions, conjunctions, adjectives, deixis and spatial reference

3. Discourse task

- Respondents who complete all 3 translation sets move on to the discourse task
- 6 photos from the lexical recognition set are used to trigger discourse
- CLW displays a trigger photo and prompts the respondent to talk in the TL for a short while about the scene, or to make up a story
- Stories are recorded for later analysis
- With young children for whom the concept of the discourse task may be difficult to understand, the test may be adapted
- Instead of the respondent telling a story, the CLW may instead have a short conversation with the child in the TL

Discourse task instructions

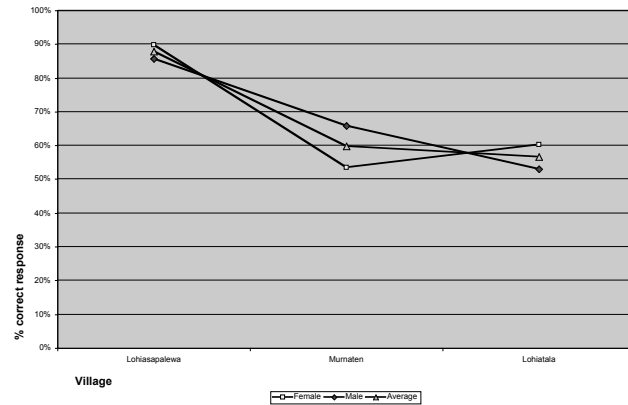
Speaker	Ambonese Malay	English
BL	Jadi beta ada minta supaya Kristofer ada bikin cerita sedikit dengan enam gambar ini, dalam bahasa Alune.	So I'm asking Kristofer to make a short story with these six pictures, in Alune.



Pilot testing

Earlier testing and validation of the test methodology in three Alune villages

Pilot test results for lexical recognition task children 6-15 years in 3 Alune villages



Pilot test results for translation task

- Indicated that speakers could be grouped according to their shared use of certain linguistic features: e.g.
 - Alune vs. Malay word order
 - Malay loanwords
 - innovative grammatical strategies (e.g. possession, spatial reference)

Sample pilot test results for translation task

Sentence 3
"I didn't go" [negation]

Malay elicitation sentence
Beta seng pigl
1s NEG go

KEY: village, gender, age

Alune target response
Au 'eu mo
1s go NEG

recorded with older fluent speakers

Au keu mo [Mrtn f12]
1s go NEG

young children matching older fluent speaker norm

Au 'eu mo [LT m13]
1s go NEG

Au perai mo [LS f8]
1s go.MAL NEG

Alune word order with Malay loan

Au pigl mo [Mrtn m10]
1s go.MAL NEG

Au tidak pigl [LT m9]
1s NEG.MAL go.MAL

Malay word order, Malay lexemes, Alune marked only with 1s pronoun

Sample pilot test results for translation task

Sentence 9
"My leg is sore" [alienable possession]

Malay elicitation sentence
Beta pung kaki sakit
1s POSS leg sore

Alune target response
Au 'u-lelale 'era
1s 1sPOSS.AL-leg sore

recorded with older fluent speakers

Au ku-lelale kera [Mrtn m12]
1s 1sPOSS.AL-leg sore

young children matching older fluent speaker norm

Au ku-lelale kera [LS f10]
1s 1sPOSS.AL-leg sore

Au ku-lelale sakit [Mrtn m11]
1s 1sPOSS.AL-leg sore.MAL

Alune word order with Malay loan

Au kaki mere e-kera [Mrtn f16]
1s leg.MAL that 3sNH-sore

Alune word order, no possessive morphology (juxtaposition strategy), Malay loan

Au kaki sa'ite [LT f12]
1s leg.MAL sore.MAL

Alune word order, no possessive morphology (juxtaposition strategy), Malay loans, Alune marked with 1s pronoun and nativisation of phonology

Sample pilot test results for discourse task

Interview with Nimrod (m 8 yrs)

Speaker	Alune	English
CLW	Nime, memane a 'eu etia?	Nimrod, where did you go yesterday?
NM	Depa bolate.	Cut a pop-gun.
CLW	A depa bolat 'ai sidei?	Who did you cut the pop-gun with?
NM	Anteni.	Anteni.
CLW	Ho' imi depa etia?	So where did you all cut it?
NM	<u>Kubure.</u>	Graveyard.
CLW	Amure mise pi be mo?	Was yours good or not?
NM	Mise.	Good.
CLW	Ele'i leu lomei, imi dunu lomai etia?	So when you came home here, where did you shoot at each other?
NM	<u>Di Bu Zekeus rumah.</u>	At Mr Zekeus' house.
CLW	Ale 'ai sidei?	You and who else?
NM	Anteni, Petuka.	Anteni, Petuka
CLW	Sidi danire? Sai dani moyo?	Who cried? Wasn't there someone who cried?
NM	Mo.	No.

Sample pilot test results for discourse task

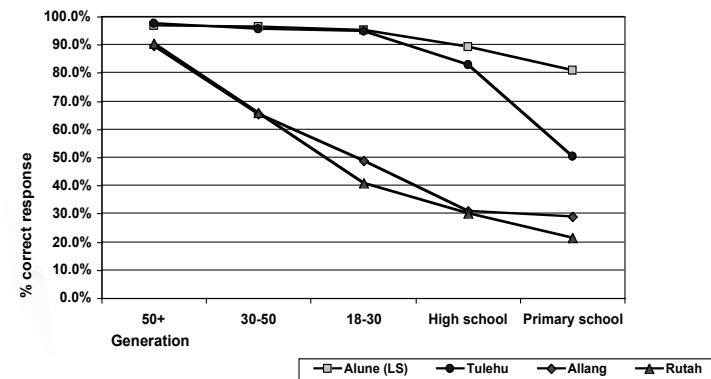
Interview with Nimrod (m 8 yrs)

Speaker	Alune	English
CLW	Imi 'eu depa bolate, imi 'eu lo' etia? 'eu lulu lalan dia?	When you all went to cut pop-guns, where did you all go? Which road did you take?
NM	<u>Jalan raya.</u>	The main road.
CLW	Ele'i doma mpei, ului esa ei ono ei nie pi behe Anteni ei ono mue?	Then when you got there, did each of you make his own or did Anteni make yours?
NM	Au ono aukure sendiri.	I made mine myself.
CLW	A nte'wa bolat pende?	Do you know how to make a pop-gun?
NM	Peneka.	Already.
CLW	Leu lomei mei hena, ale kai sidei luami dunu lomajje?	When you came home to the village, you and who else fired at each other?
NM	<u>Beta deng Teni</u>	Me and Teni.
CLW	Imi bo'ala ei naie 'eu ndi Laturakere mina.	The lot of you ran to Laturake.
NM	<u>Katong ikut.</u>	We followed along.
CLW	Bei mei henare imi doma mpe Papa olas ila?	From the village, what time did you all get to the Papa?
NM	<u>Sepuluh.</u>	Ten.
CLW	Ele'i imi lo' etia le'we?	Then where else did you go?
NM	Lolete.	Up there.

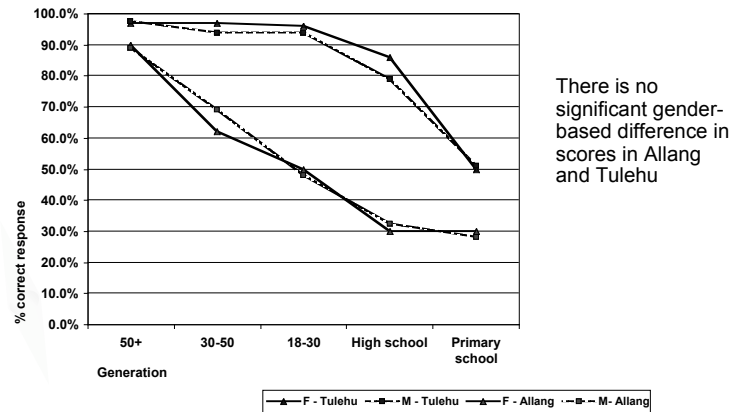
2005-2006 Results

1. Lexical recognition

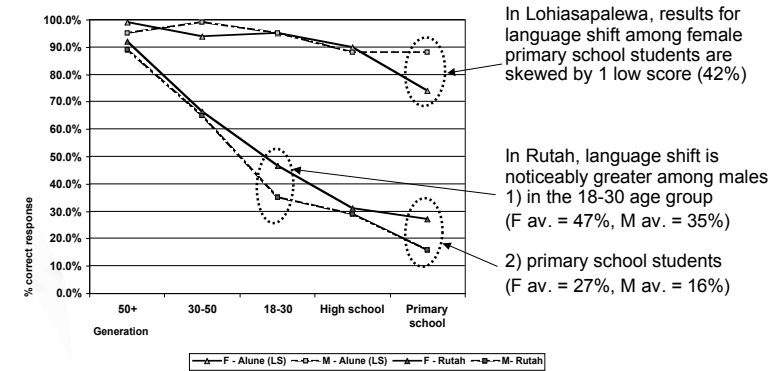
Comparative lexical recognition results in 4 language groups



Results by gender and language 1



Results by gender and language 2



Results — religion

- Literature suggests that maintenance of indigenous languages in central Maluku is greater in Muslim than in Christian villages for complex historical reasons
- Results demonstrate that this pattern no longer holds: language shift is now a serious issue across religious boundaries
- Christian Allang and Muslim Rutah have been following the same trajectory of language shift for more than forty years
- 25 years later, Muslim Tulehu is shows the same trajectory of tip from high school to primary school aged children
- Language shift has also commenced among high school and primary school children in Christian Lohiasapalewa
- In several Christian and Muslim villages (e.g. Allang, Rutah, Soahuku) indigenous languages are no longer being transmitted and there are very few speakers older than 40 years

Results — indigenous knowledge

Little traditional ecological knowledge has been retained in coastal villages or in the city. Results indicate loss of knowledge relating to:

- traditional implements such as
 - fishing spear, fish trap, harvesting tools
- botany
 - plant species such as nutmeg (*Myristica fragrans*), betel nut palm (*Areca catechu*), taro (*Colocasia esculenta*)
- sago technology
 - sago processing techniques, tools, cooking methods, serving implements


Results

2. Translation task

Potential task 2 respondents

	Lohiasapalewa		Tulehu		Rutah		Allang	
	Female	Male	Female	Male	Female	Male	Female	Male
Primary grade 4	74	88	50	51	27	16	30	28
Junior High 2	93	82	89	84	31	24	21	29
Senior High 2	87	94	84	74	31	35	39	36
18-30	95	95	96	94	47	35	50	48
30-50	94	99	97	94	67	65	62	69
50+	99	95	97	98	92	89	90	89

average % scores by gender and village/language

 Respondents who correctly identified $\geq 66\%$ (35/53) of the items on the recognition task and thus were considered able to manage task 2

Translation task

In Allang and Rutah, not all participants who scored $\geq 66\%$ were willing or able to take the translation task. Of those who qualified, the following undertook the translation task.

	Allang	Rutah
30-50	1/2	1/4
50+	6/7	6/7
	78%	64%

Translation task respondents

Village	Age Group	Sentence set 1	Sentence set 2	Sentence set 3	Total completed 3 sentence sets
Allang	30-50	1	1	1	7/37 respondents 18.9%
	50+	6	6	6	
Rutah	30-50	1	1	1	7/36 respondents 19.4%
	50+	6	6	6	
Tulehu	Primary grade 4	1	0	0	26/37 respondents 70.3%
	Junior High 2	6	6	6	
	Senior High 2	5	5	5	
	18-30	6	5	3	
	30-50	6	6	6	
	50+	6	6	6	
LohiaS	Primary grade 4	5	5	5	36/37 respondents 97.3%
	Junior High 2	6	6	6	
	Senior High 2	6	6	6	
	18-30	6	6	6	
	30-50	7	7	7	
	50+	6	6	6	

Kristofer (m 1995)

Speaker	sentence	Malay / <i>Alune</i>	English
BL	6	Ikan ini sedap.	This fish is tasty.
KM		<i>lane meje, ntelete.</i>	This fish is tasty.
BL	7	Beta seng makan kusu.	I don't eat cuscus.
KM		<i>Au 'ane marele mo.</i>	I don't eat cuscus.
BL	57	Beta sakit karena hujan.	I'm sick because of the rain.
KM		<i>Ale sa'i le ulane tetu ale.</i>	You're sick because rain fell on you.
BL	59	Beta bikin bakal par bawa di kebun.	I made a picnic to take to the field.
KM		<i>Au ono masate le bawa mei mlinu.</i>	I made a picnic to take to the field.
BL	68	Beta pi di gunung dan beta lihat kusu.	I went to the mountains and I saw a cuscus.
KM		<i>Au 'eu lete</i>	I went up to
BL		dan beta lihat kusu.	and I saw a cuscus.
KM		<i>ulate au selu marele.</i>	the mountains I saw a cuscus.

Rutah — grammatical innovation

Sentence 10

"Your eyes are itchy." [inalienable possession]

Malay elicitation sentence

Ale pung mata gatal

Q POSS eye itch

72M Rutah

Ma'a-u e-si'i.
eye-1sPOSS.INAL 3sNHA-itch

39F Rutah

Ale ma'atu gatal.
2s eye-1sPOSS.INAL itch.MAL

Malay loan, lack of agreement

Rutah — grammatical innovation

Sentence 14

"When is s/he coming home?" [question formation]

Malay elicitation sentence

Apa tempo dia pulang?

Q time 3s return.home

72M Rutah

Po'u ayira i-reu?
day how.many 3sA-return.home

39F Rutah

Ale reu?
2s return.home

intonation strategy to form question

Rutah and Tulehu — grammatical innovation

Sentence 1

"I went to the garden."

Malay elicitation sentence

Beta pigi di kebun
1s go LOC garden

72M Rutah

Au na oi ro'o mirim-o.
1s IRR go DIR garden-NM

39F Rutah

Au oi se mirim.
1s go LOC garden

Sentence 74

"They're looking for durian in the mountains."

Malay elicitation sentence

Dong cari durian di gunung
3p look.for durian LOC mountain

60M Tulehu

Isi lohi duren-e rete ean-e
3pl look.for durian-NP DIR mountain-NP

16F Tulehu

Si lohi duren wa'a gunung-e
3pl look.for durian LOC mountain-NP

YS — locative vs. directional, Malay loan

levelling of spatial reference system by younger speakers

Results

3. Discourse

Alune — Kristofer (m 1995)

Alune

Manu bata 'ai manu tulale
ehi 'ane ala.

English

Hen and rooster,
they're eating rice.



Two chickens

Alune — Maria (f 1977)

Alune

Au sementara meje au piala manue,

bata, tulale.

Masie bo'a bo'a mosa po usaha-usaha mina,

le, be manane.

Ma'eri'e bo'a 'wat ho'o sae 'eu ono mlinu mo.

'epene, cu'up mo lo sabe ala,

po, au sementara meje au usaha-usaha mina.

English

At the moment, I'm raising chickens,

hens, roosters.

Although there aren't many yet but (you)
have to make an effort,

because, for food.

There's a lot of work, so there's no
going to the garden.

Money, (there's) not enough to buy rice,

but, at the moment I'm making an effort.

Identifying paths of language shift

Paths of language shift

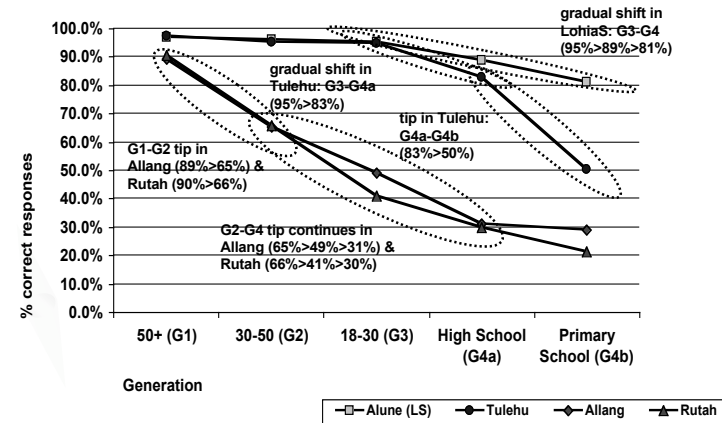
1. Gradual shift

- ~10-15% decrease in linguistic ability from one generation to the next (measured on standardised test)

2. Abrupt transmission failure or "tip"

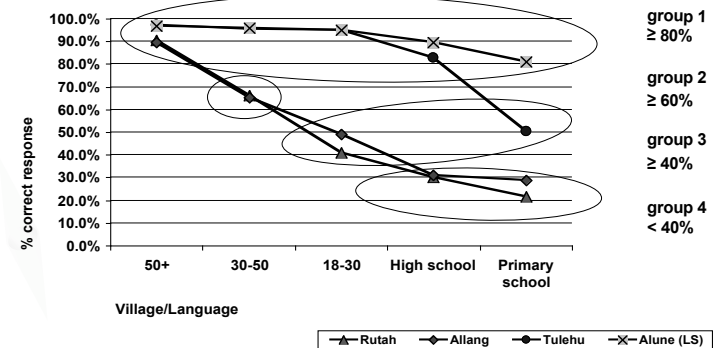
- "In terms of possible routes toward language death, it would seem that a language which has been demographically highly stable for several centuries may experience a sudden "tip", after which the demographic tide flows strongly in favor of some other language." (Dorian 1981: 51)
- ≥ 20% decrease in linguistic ability from one generation to the next (measured on standardised test)

Comparing patterns of shift to Malay (AM and Indonesian) in 4 language groups



Identifying speaker groups

1. Using receptive ability (lexical recognition scores) to profile speaker /non-speaker groups



Receptive ability and speaker/ non-speaker groups

Age group	LohiaS	Tulehu	Allang	Rutah	
50+	97%	97%	89%	90%	Group 1
30-50	96%	96%	65%	66%	Group 2
18-30	95%	95%	49%	41%	Group 3
High school	89.5%	83%	31.5%	30%	Group 4
Primary school	81%	50.5%	29%	21.5%	

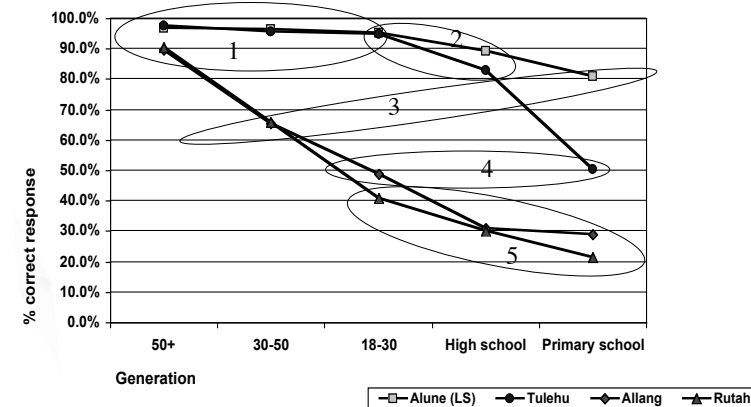
2. Combining receptive and productive ability

- Combining results from receptive (lexical recognition) and productive (translation and discourse) tasks allows the researcher to refine speaker/non-speaker groups based on:
 - productive knowledge of the lexicon
 - shared innovations (word order, grammatical features, use of loans)
 - creative use of the target language over a range of genres
 - etc.

2. Combining results from receptive and productive tasks

- distinguishes primarily between higher scoring groups ($\geq 80\%$) where strong receptive ability need not correlate with strong productive ability
- indicates that respondents scoring $\leq 40\%$ have neither receptive nor productive ability

Receptive and productive ability and speaker/ non-speaker groups



Receptive and productive ability and speaker/non-speaker groups

Age group	LohiaS	Tulehu	Allang	Rutah	
50+	97%	97%	89%	90%	Group 1
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18-30	95%	95%	49%	41%	Group 3
High school	89.5%	83%	31.5%	30%	Group 4
Primary school	81%	50.5%	29%	21.5%	Group 5

Receptive and productive ability and speaker/non-speaker groups

- Lohia: 3 groups of speakers rather than just 1
 - Identifies restricted productive ability and grammatical innovation amongst LohiaS G4a and clusters G4a in Group 2 with Tulehu G3 and G4a
 - Identifies the limited productive ability and greater extent of grammatical innovation amongst LohiaS G4b and clusters G4b in Group 3 with Rutah and Allang G2
- Tulehu: 3 groups of speakers rather than 2
 - Identifies a distinction in speaker ability in G3 between Tulehu and LohiaS, despite identical lexical recognition scores (95%) and clusters Tulehu G3 in Group 2 with LohiaS and Tulehu G4a
- Rutah: 3 groups of speakers rather than 4
 - Identifies lack of productive ability amongst Rutah G3 and clusters G3 in Group 5 with Rutah and Allang G4a and G4b

Standardising identification of speaker groups

Fluent speakers (group 1)

- fluent productive ability
- ability to speak over a range of topics, genres
- little use of loanwords

Fluent innovative speakers (group 2)

- fluent productive ability
- restricted range of topics, genres
- some grammatical changes in comparison to fluent speaker norm
- some code-switching / use of loanwords

Semi-speakers (group 3)

- limited productive ability
- very restricted range of topics, genres
- frequent code-switching / extensive use of loanwords
- greater grammatical change in comparison to fluent innovative speakers
- word order changes

Passive bilinguals (group 4)

- no productive ability in TL
- receptive ability only

Non-speakers (group 5)

- neither receptive nor productive ability in TL

Speaker groups in Maluku

Fluent speakers

- Lohia ≥ 18 years (G1, 2, 3)
- Tulehu ≥ 30 years (G1, 2)
- Allang ≥ 50 years (G1)
- Rutah ≥ 50 years (G1)

Fluent innovative speakers

- Lohia 12-18 (G4a)
- Tulehu 12-30 (G3, 4a)

Semi-speakers

- Lohia ≤ 12 years (G4b)
- Allang 30-50 (G2)
- Rutah 30-50 (G2)

Passive bilinguals

- Tulehu ≤ 12 years (G4b)
- Allang 18-30 (G3)

Non-speakers

- Allang ≤ 18 years (G4a, 4b)
- Rutah ≤ 30 years (G3, 4a, 4b)

Gauging and standardising definitions of linguistic vitality

Threatened language

- (rapidly) increasing innovation
- measurable language shift
- decrease in language use among younger people (following pattern identified in other areas)

Endangered language

- restricted contexts for use among fluent speakers
- linguistic tip > 25% reduction in speaker ability (using standardised test)
- receptive ability only among youngest generation

Moribund language

- very restricted contexts for use among fluent speakers
- fluent speakers limited to oldest generation
- severe linguistic tip
- parent generation have receptive ability only

Linguistic vitality in Maluku

Threatened (Lohiasapalewa)

- G1-G3: fluent speakers
- G4a: fluent speakers of innovative varieties
- G4b: semi-speakers

Endangered (Tulehu)

- G1-G2: fluent speakers
- G3-G4a: fluent speakers of innovative varieties
- G4b: passive bilinguals

Moribund (Allang and Rutah)

- G1: fluent speakers, very restricted contexts for use
- G2: (very few) fluent speakers of innovative varieties
- G1-G3: severe tip of 49% in Rutah, 40% in Allang
- G3: passive bilinguals in Allang; non-speakers in Rutah
- G4a, 4b: non-speakers in Allang or Rutah

Where to from here?

1. Combine measures of linguistic vitality (LVT) and traditional ecological knowledge (TEKVI)
2. Develop Vitality Index for Indigenous Languages and Traditional Ecological Knowledge (VIILTEK)
3. Pilot VIILTEK in two research sites in different language groups (Venezuela, Maluku)
4. Develop a template which could be applied in different ethnolinguistic groups

Endangered Maluku Languages Project

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