mımı∫ (Mermish)

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# Backstory

### 1.1 General Backstory

Society of mer-people (*meeple*, or *merson* in the singular), who split off from humans before human development of language, so not influenced by human language. Influenced by what sounds carry underwater (e.g. fewer stops, more vowels, nasals, clicks) and how other sea creatures communicate (e.g. whales, clownfish). Used to live closer to coasts, but are now deep sea dwellers, so ocean surface is where dead things go and where danger is, but also where food comes from. Northern Atlantic Ocean off the coast of Newfoundland (that's where I got the rising and falling tide times for the time sentences).

There is currently no written form of the language.

### 1.2 Biology

6 fingers on each hand (2 opposable thumbs, same other 4 fingers as humans (webbing between pairs of fingers so pairs can work as a unit but also hands can be used for paddling in water) (see Appendix B for illustration); gills inside the body, so lungs are used to move water past the gills and hold water the same way humans hold their breath); tail-fins come in colors usually blue/purple or sometimes dark red; no gender or sex, baby mersons are made by one single parent just wanting it really badly.

### 1.3 Daily Life

Mostly hunting for food, since they live in open ocean/deep sea (esp. since human developments made it unsafe to be near the coast because humans pollute and are also liable to hunt you for food and sport); poor eyesight, so more words for smells/sounds as well as orientation wrt the earth (magnetic fields); lots of human cargo ships lose cargo in the ATlantic, and they're interested in what they find because htey can sometimes be useful but also it just adds to the ocean trash situation which is not good; because of their need to remain undetected and mobile, they don't keep a lot of unnecessary items.

### 1.4 Society

Everyone is mostly spread out because there's space to do that in the ocean, but "highway" travel via currents (e.g. Gulf stream); mostly live in nomadic tribes (pods, like whales) that belong to geographic kingdoms, but distance means royalty is not relaly part of daily life; generally peaceful, since there's a lot of pressure to exist off humans' radar and survive in over-fished oceans.

### 1.5 Values

Good things are associated with ocean currents, which bring warm and nutrient-filled waters as well as food and a means of travel; storms are not good because the rain and turbulent water makes it hard to hear at a distance; whales are very good because they are a source of food and are mysterious and majestic.

### 1.6 Mythology: 3em and safi

The story of the oceans goes something like this:

Back when the world was young, the earth was bored and wished to fill the world with creatures to watch over. But the world is a big place, and filling it would take time, so Earth called on all their children to help them. To their youngest children,  $3\varepsilon$ m and safi, two giant saltwater catfish, they gave the responsibility of filling the oceans.

3ɛm and safi soon began to struggle with their tasks. Their personalities were just too different, and all they could agree to make in those first days were flatworms and sea cucumbers. So they spoke to Earth, who divided the oceans between the two.

To 3ɛm, they gave all the places the light could touch under the water. 3ɛm, who loved to run and play and especially loved to eat, crafted his world in his vision. He filled the coasts and the reefs with millions of different fish so he'd never get bored, and filled the open ocean with huge schools of fish so he'd never go hungry.

To safi, the Earth gave the deepest parts of the sea, where light would never reach from above. safi, who had a deep love of sleeping, dozing, and napping, took her time. As 35m created every variation of fish and crustacean he could imagine, safi slept. While she slept, she dreamt. And out of those dreams crawled the strangest, most bizarre creatures to grace the planet.

Eventually, zem's creations drew hungry humans to the water, and the merpeople retreated away from the abundance and variety of zem's waters to the safety of sofi's dark and strange domain.

### 1.7 Metaphors

Whales: live in pods and are mysterious because they spend time above/near the surface (where mer-people can't/dont go because they can't breathe air and are afraid of humans) to breathe, then make deep dives for food (so they live both at the surface and in the deep); too big for meeple to hunt, but are a windfall of food and resources when they die.

Conceptual metaphor: People (target) are whales (source)

- 1. he's breaching  $\rightarrow$  he's taking a risk for unknown reason (dating back to before mermaids realized whales need to breach to breath)
- 2. a dolphin  $\rightarrow$  someone who isn't a useful resource to the tribe (based on the premise that dolphins are fake tiny whales)

Conceptual metaphor: Opportunities (target) are whales (source)

- 1. a fat opportunity  $\rightarrow$  an opportunity that yields large positive results
- 2. a diving opportunity  $\rightarrow$  it's coming closer (time-wise) / getting closer within the realm of possibility

#### 1.8 Time

Time is usually not precisely told, so it's reported to the closest hour. When discussing lengths of time, it's acceptable to use fractions of hours (e.g. meet me in 1/3 hour), and then most people just estimate how long that is as timekeeping is a difficult art underwater.

The numbers six and 12 are important to these meeple, as each merson has 12 fingers, or six sets of webbed pairs (see Appendix B). Each year is divided into five months, each named after an animal historically hunted in that month. Each month has six aifie ("weeks") of twelve aigfie (days) each and with 5 days at the end of the year not in any month. The days of the week are named after fingers on the hand, starting from right to left.

The time system is based on the tides, dating back to when this civilization lived close enough to the coast to be affected by the tides. Even though they have moved away from the coasts toward open ocean and the deeps, they still use the established system of keeping time.

Each day is divided into 4 sections of six hours, originally based off the tidal schedule. Each hour has (about) 60 minutes (like human hours). The first section of the day starts around what we'd call 5:00 AM. Time is told

by how many hours into a section have passed.

Time (human)	Language (IPA)	English (literal)
5:00-11:00	ziʒɪm	rising tide
11:00-16:00	sazım	falling tide
16:00-23:00	aŋziʒɪm	second rising tide
23:00-5:00	aŋsaʒım	second falling tide

Table 1.1: The four sections of the day

# Phonology

### 2.1 Inventory

	Labial	Labiodental	Dental	Alveolar	Palato-Alveolar	Velar	Glottal
Nasal	m			n		ŋ	
Plosive	$p p^h$			$t\;t^h$		$\mathbf{k} \; \mathbf{k}^h$	
Affricate							
Fricative		$\mathbf{f}$	θ	s z	∫ 3	X	ĥ
Approx.				$\mathbf{r}$			
Lat. approx.				1			
Glide	w						
Click	0				!		

Table 2.1: Consonants

	Front	Central	Back
High	i i: y y:		w w: u u:
Near-High	I II		υυ
High-Mid	e ez		
Mid		¥6 6	
Low-Mid	13 3		$\Lambda\Lambda$
Near-Low	ŒŒĬ		
Low			a ar

Table 2.2: Vowels

### 2.2 Phonological Rules

In order of application:

- 1.  $(C/V)_1^{\hat{}}(C/V)_1 \to C_1^{\hat{}}$ : / \_\_\_ Adjacent identical sounds across morpheme boundary changes into sound + long. e.g. vm:i + ini  $\to$  vm:ini
- 2.  $\varnothing \to [\varepsilon] / C_{[+manner1]} \_ C_{[+manner1]}$   $\varepsilon$  epenthesized between adjacent consonants of same manner of articulation at morpheme boundary e.g.  $\eta e = + \sin \omega \to \eta e = \sin \omega$
- 3.  $C_{[+stop]} \to C_{[+nasal]} / \_ (C/V)$ Stops change to nasals when they are not word-final e.g.  $ak^h + zizim \to anzizim$

NB: order of application matters!  $\begin{array}{l} {\rm ak}^h + {\rm grap}^h \not\to {\rm agegrap}^h \\ {\rm ak}^h + {\rm grap}^h \to {\rm agrap}^h \end{array}$ 

$$ak^h + nap^h \rightarrow anap^h$$

#### 2.3 Syllable Structure

Allowed Syllable Structures:

- $1. \ (C_{[-stop]})(C_{[-stop]})V$
- $2. \ V(C_{[-stop]})(C_{[-stop]})(C)$
- 3. (C)
- 4. V\*
- 5.  $V * (C_{[-stop]})V *$

Stops must be word-final.

# Counting and Numbers

### 3.1 Numerals

The number system of this language is in base 12, because each hand has 6 fingers (see Appendix B). Numbers 0-12 have their own words, numbers 13-15 are compounds with some irregularity, and all numbers beyond are also compounds formed the same way but regularly. Compounds take the form number + /fie/ ('and' used for adding numbers) + number. 24 is its own word, and other multiples of 12 are compounds of the form k twelve.

	Language	English (literal)		Language	English (literal)
1	ու	one	13	anfieu	twelve and one
2	$ak^h$	two	14	anfiea	twelve and two
3	sa	three	15	anfiesa	twelve and three
4	рез	four	16	anfieŋeʒ	twelve and four
5	$\mathrm{m}\mathrm{v}\mathrm{t}^h$	five	17	${\rm anfiem}{\it vt}^h$	twelve and five
6	$\operatorname{emp}^h$	six	18	$\operatorname{anfie}_{\operatorname{\mathfrak{E}mp}^h}$	twelve and six
7	eiə	seven	19	anfieriə	twelve and seven
8	esl	eight	20	anfiersl	twelve and eight
9	fii	nine	21	anfiefii	twelve and nine
10	is	ten	22	$\mathrm{anfieir}^h$	twelve and ten
11	fʊf	eleven	23	anfiefuf	twelve and eleven
12	$\mathrm{at}^h$	twelve	24	$\widehat{\mathrm{h} \mathrm{ut} f}$	twenty four
			25	hʊt͡∫ĥeɦʊ	twenty four and one

Table 3.1: Some number examples

Numbers modifying nouns agree with the nouns they modify in number and case and appear after all adjectives modifying that noun.

#### e.g. four hours

```
1. xenfie ŋeʒfie
  хen
         -fie
                         -fie
                   рез
  hour
         -NOM.PL four -NOM.PL
  hours
  'four hours(NOMINATIVE)'
2. хепл резл
                   пез
  hour
         -ACC.PL four -ACC.PL
  hours
                   four
  'four hours(ACCUSATIVE)'
```

```
3. xensfe nezsfe
```

```
x \in n -sf \in ne3 -sf \in nor hour -POSS.PL four -POSS.PL its-hours its-four 'four hours(POSSESSIVE)'
```

### 4. хепә резә

### 3.2 Ordinals

Ordinals do not agree with the nouns they modify in case and number. Rather, they are formed by attaching to the beginning of nouns they modify as a clitic.

e.g.

```
1. rising tide : zizım second rising tide : ak^h + zizım \rightarrowaŋzizım
```

```
2. fish: ∫:e∫:
```

```
second fish: ak^h + fief: \rightarrow anfief: third fish: sa + fief: \rightarrow safief: eighth fish: esl + fief: \rightarrow eslfief:
```

25th fish: huthehu +  $f:ef: \rightarrow huthehu f:ef:$ 

# Noun Morphology

### 4.1 Singulars, Duals, And Plurals

For singular and dual nouns, if no number is included then it is an implicit one or two respectively. For plural nouns, either a number must be specified or the word slix, meaning *some unspecified amount*, must be used. e.g.  $red\ tail\text{-}fin(s)$ 

```
saip^h flims
saiph^h
                    ſlims
tail-fin -NOM.SG
                    red
                           -NOM.SG
tail-fin
                    red
'red tail-fin'
saım: Ilmsm
saım
         -m
                    ∬lms
                           -m
tail-fin -NOM.DU
                    red
                           -NOM.DU
tail-fin -s
                    red
'(two) red tail-fins'
saımfie İlimsfie safie
                                             -ĥe
         -fie
saım
                    ſlims
                           -fie
                                      sa
tail-fin -NOM.PL red
                                     three -NOM.PL
                           -NOM.PL
tail-fin -s
                    red
                                      three
'three red tail-fins'
saımfie flimsfie slixfie
saım
         -fie
                    ſlims
                           -fie
                                      slix
                                             -fie
tail-fin -NOM.PL
                           -NOM.PL
                   red
                                      some
                                             -NOM.PL
tail-fin -s
                    red
                                      some
'some red tail-fins'
```

## 4.2 Case Endings

Nouns have **number** (singular, dual, plural) and **case** (nominative, accusative, possessive, and adpositive (used in adpositional phrases)). The number and case are indicated with suffixed morphemes, where each combination of number and case has a different morpheme. The nominative singular form is marked with a null morpheme.

### 4.2.1 Accusative Case

The accusative case is most often used without an adposition to indicate a noun is the object of a transitive verb. e.g.

Number	Nominative	Accusative	Possessive	Adpositive
SG	-Ø	-aı	$\mathrm{rt}^h$	<b>-</b> a
DU	-m	-ia	-we	-i
PL	-fie	-J	-sfe	-9

Table 4.1: Case endings

```
saigu filmsau
sai -au films -au
tail-fin -ACC.SG red -ACC.SG
tail-fin red
'red tail-fin'
```

### 4.2.2 Nominal Possession (Possessive Case)

Possession is shown by marking the possessive case on the possessed, with no marking on the possessor. Possessed nouns can be **alienable** or **inalienable**, which affects the word order within the noun phrase. Alienable nouns appear before the possessor, and inalienable nouns appear after the possessor.

```
\operatorname{saip}^h \operatorname{newhit}^h
saip^h
                                  -it^h
          -Ø
                      ηεwhi
tail-fin -SG.NOM color
                                  -SG.POSS
tail-fin
                      its-color
'tail-fin's color'
fiefith wlath
                       wlat^h
ſĸeſĸ
fish
          -SG.POSS
                      1.SG.PRO
its-fish
                      it
'its fish'
wlat^h hemuut^h
wlat^h
             бетш
                         -it^h
1.sg.pro head
                         -SG.POSS
             its-head
'its head'
saip^h newfirth
saip^h
                                  -it^h
                      ηεwhi
tail-fin -SG.NOM color
                                  -SG.POSS
tail-fin
                      its-color
'tail-fin's color'
```

In the examples above, a fish is not inalienable to a merson (mer-person), but color is inalienable to a tail-fin and a merson's head is inalienable to a merson. Comparison between examples 2 and 3 demonstrates the word order difference between alienable and inalienable possessives.

Nominal possession can be applied recursively, where the possession is applied first to the head, then to each possessor. A brief example:

'my fish's color'

For more examples of recursion, see Section 5.2.

### 4.2.3 Adpositive Case

e.g. indirect object

This case is taken by nouns in adpositional phrases. The adposition is in most cases clitics (postposition) positioned after the last word in the adpositional phrase. These are can be used used to indicate a location, position, indirect object, or more.

```
f:ef:amat<sup>h</sup>
∫:e∫: -a
                -mat^h
fish -SG.ADP -IO.POST
fish
                to
'to a fish'
f_{i} = f_{i} = f_{i}
ſzeſz -i
                 -mat^h
fish -DU.ADP -IO.POST
fish two
                to
'to two fish'
    e.g. instrument
anılziasi
anılzi
                        -si
              -a
whale-bone -SG.ADP -INSTR.POST
whale-bone
                        using
'using a whale-bone'
anılzi:si
anılzi
              -i
whale-bone -DU.ADP -INSTR.POST
whale-bone two
                        using
'using two whale-bones'
    e.g. in
∫te∫tasæ
ſzeſz -a
                -SŒ
fish
     -SG.ADP -INE.POST
fish
                in
'in a fish'
∫ie∫iə slixəsŒ
∫ze∫z -ə
                slix
                                 -SŒ
fish -PL.ADP some -PL.ADP -INE.POST
fish
                some
                                 in
'in some fish'
    e.g. into
ſæſæsei
ſːeʃː -a
                -sei
fish -SG.ADP -ILL.POST
fish
                in
```

'into a fish'

#### 4.3 Pronouns

Pronouns have **number** (singular, dual, plural), **person** (1st, 2nd inclusive, 2nd exclusive, 3rd), and **case** (nominative, accusative, and adpositive (used in adpositional phrases)). Meeple (mer-people) do not have gender or sex, as is reflected in the language, so third person singular pronouns are applied the same to all individuals and also things. Pronouns do not have a possessive case because people cannot be owned (relation is not shown through possession).

Number	Person	Nominative	Accusative	Adpositive
SG	1	$\mathrm{wlat}^h$	wlanaı	wlana
	2	zem	zemaı	zema
	3	за	заал	zaa
DU	1 inc	$\operatorname{slap}^h$	slamiı	slami
	$1  \mathrm{exc}$	slan!	slaniı!	slani!
	2	zea	zeaiı	zεai
	3	$\mathfrak{z}\mathrm{ent}^h$	3en:i1	ʒεn <b>x</b> i
PL	1 inc	nε∫	ne∫ı	nɛ∫ə
	$1  \mathrm{exc}$	nε∫!	ne∫₄!	ne∫ə!
	2	sεi	seiı	seiə
	3	$\mathfrak{z}\mathrm{eint}^h$	zeinu	zeinə

Table 4.2: Table of Pronouns

```
e.g.
\int \mathbf{x} \mathbf{e} \int \mathbf{x} \mathbf{t}^h \ \mathbf{w} \mathbf{l} \mathbf{a} \mathbf{t}^h
                                   wlat^h
ſĸeſĸ
fish
                -SG.POSS me
its-fish me
'my fish'
ſːeʃːɪtʰ ʒa
ſĸeſĸ
                                   3a
fish
               -SG.POSS it
its-fish it
'its fish'
\int \mathbf{x} \mathbf{e} \int \mathbf{x} \mathbf{t}^h \operatorname{slap}^h
                                        slap^h
ſæſ
                -it^h
fish
                                        1.DU.INCL
               -SG.POSS
its-fish you-and-me
'our fish'
\int \mathbf{x} \mathbf{e} \int \mathbf{x} \mathbf{t}^h \, \mathbf{slan!}
                -it^h
ſĸeſĸ
                                                          slan!
                                                           1.DU.EXCL
fish
                -SG.POSS
its-fish two-of-us-but-not-you
'our fish'
```

To see how possession works in these examples, see Section 5.1.

## Noun Phrases

### 5.1 Possession

e.g.

'its head'

Possession is shown by marking the possessive case on the possessed, with no marking on the possessor. Possessed nouns can be **alienable** or **inalienable**, which affects the word order within the noun phrase. Alienable nouns appear before the possessor, and inalienable nouns appear after the possessor.

```
\operatorname{saip}^h \operatorname{newhit}^h
saip^h
                                         -it^h
                           ηεwhi
tail-fin -SG.NOM
                           color
                                         -SG.POSS
tail-fin
                           its-color
'tail-fin's color'
saip^h newfirth
saip^h
                                         -it^h
                           ηεwhi
tail-fin -SG.NOM
                           color
                                         -SG.POSS
tail-fin
                           its-color
'tail-fin's color'
\int \mathbf{x} \mathbf{e} \int \mathbf{x} \mathbf{t}^h \ \mathbf{w} \mathbf{t}^h
                            wlat^h
ſæſ
fish
            -SG.POSS
                           1.SG.PRO
its-fish
'its fish'
wlat^h hemuit^h
wlat^h
                бетш
1.SG.PRO
               head
                              -SG.POSS
                its-head
it
```

In the examples above, a fish is not inalienable to a merson (mer-person), but color is inalienable to a tail-fin and a merson's head is inalienable to a merson. Comparison between examples 2 and 3 demonstrates the word order difference between alienable and inalienable possessives.

Nominal possession can be applied recursively, where the possession is applied first to the head, then to each possessor. A brief example:

For more examples of recursion, see Section 5.2.

### 5.2 Recursion

e.g.

e.g. all

Nominal possession can be applied recursively, where the possession is applied first to the head, then to each possessor, applying the ordering rules for alienable/inalienable nouns. For cases of multiple levels of recursion in the same noun phrase, word ordering can lead to ambiguity. Thus, for complex recursive nominal possession, any important words in the phrase are pulled to the beginning of the sentence and the rest of the possessive phrase is left to the audience to be understood from context.

```
\operatorname{saip}^h \operatorname{newhit}^h
saip^h
           -Ø
                 ηεwh
tail-fin
                 color
                              -1.SG.POSS
tail-fin
                 its-color
'tail-fin's color'
\operatorname{saimit}^h \operatorname{\eta swhit}^h \operatorname{S:eS}:
                -it^h
saim
                                                               [sef:
                                 ηεwh
tail-fin
               -1.SG.POSS
                                color
                                              -1.SG.POSS fish
its-tail-fin
                                its-color
                                                               fish
'fish's tail-fin's color'
newfith saimith fiefiith ama
             -it^h
                                              -it^h
                                                                          -it^h
newh
                              saim
                                                               ſĸeſĸ
                                                                                          ama
color
             -1.sg.poss tail-fin
                                              -1.SG.POSS
                                                               fish
                                                                          1.sg.poss
                                                                                          parent
its-color
                              its-tail-fin
                                                               its-fish
                                                                                          parent
'parent's fish's tail-fin's color'
```

We know in example 2 that the translation cannot be *fish's color's tail-fin* because color is inalienable, so its possessor comes before it. We can apply this same logic to example 3, also knowing that fish is alienable to parent, so it must be *paren'ts fish's...* rather than *fish's parent...*.

### 5.3 Quantifiers and Definiteness

Quantifiers and definite articles modify nouns and thus agree with the nouns they modify in number and case. For the quantifier nem, even if all of the noun in question is just one, they take the plural. Quantifiers and definite articles are listed after adjectives in use.

```
fiefi flims nem
     -Ø
           flms
ſæſ
                   -Ø
                        n\varepsilon m
fish
            red
                         all
fish
                         all
            red
'all red fish'
    e.g. definiteness
∫:e∫: ∫lims sim
      -Ø
           \int lms
[teft
                   -Ø
fish
            red
                         specific
fish
                         specific
            red
'specific red fish'
\int e^{a} \int e^{a} \int e^{a} da
                                                            -mat^h
ſæſ
                  ∬lms
      -a
                                     sim
                                                -a
fish
      -SG.ADP red
                          -SG.ADP
                                     specific
                                                -SG.ADP
                                                           -textipaio.post
fish
                                     specific
                  red
                                                            to
'to the specific red fish'
```

#### 5.4 Adjectives

e.g.

```
Adjectives agree with the nouns they modify in number and case.
   e.g.
ſːeʃː ʃlɪms
∫ze∫z -Ø
                ∫lıms
                      -Ø
```

```
fish
    -NOM.SG
                      -NOM.SG
               red
fish
                red
'red fish'
ſːeʃːm ʃlɪmsm aŋm
∫:e∫: -m
                ∫lıms
                      -m
                                 a\eta
                                       -m
fish -NOM.DU red
                       -NOM.DU
                                      -NOM.DU
                                 two
fish
                red
                                 two
'two red fish'
```

Adjectives can be negated in two ways producing two different negations:

- 1. By suffixing  $n\varepsilon_3$  to the adjective stem, meaning not-adjective, as in "not happy, but some other emotion"
- 2. By suffixing nenez to the adjective stem, meaning opposite-adjective, as in "opposite of happy i.e. unhappy"

```
∫re∫r ∫limsne3
∫zeſz -Ø
                   ∬lms
                          -n\varepsilon_3
                                   -Ø
fish -NOM.SG
                  red
                           -NEG
                                 -NOM.SG
fish
                   red
                           not
'not-red fish'
∫:e∫: i:aefnεʒ
∫zeſz -Ø
                   izaef
                           -n\varepsilon_3
                                   -Ø
fish
      -NOM.SG
                   quick -NEG
                                  -textscnom.sg
fish
                   quick not
'not-quick fish'
∫ie∫i ∫limsneʒ
∫ze∫z -Ø
                   ∫lıms
                          -n\varepsilon n\varepsilon 3
fish
      -NOM.SG
                  red
                           -NEG
                                     -NOM.SG
fish
                   red
                           -opp
'green fish'
∫:e∫: i:aefnεnε3
∫zeſz -Ø
                   izaef
```

-Ø

-textscnom.sg

 $-n\varepsilon_3$ 

quick -NEG

quick -un

#### 5.5 Word Order

-NOM.SG

fish

fish

'slow fish'

Adjectives modifying nouns appear after the nouns they modify. If multiple adjectives modify the same noun, they all follow that noun. Numbers modifying a noun follow other adjectives. Quantifiers/determiners follow numbers. Alienable possessed nouns (with possessive marker) appear before the possessor, and inalienable possessed nouns appear after the possessor.

```
e.g. ordinal + adjective
```

```
an∫ie∫i ∫lims
          ſːeſː -Ø
                              \int lims
second fish -NOM.SG red
second fish
                              red
'second red fish'
    e.g.\ possessive\ +\ definiteness
\int \mathbf{x} \mathbf{e} \int \mathbf{x} \mathbf{t}^h \mathbf{x} \mathbf{t}^h \mathbf{x} \mathbf{t}^h
          -it^h
                                                    wlat^h
ſĸeſĸ
fish
          -SG.POSS specific
                                       -SG.POSS me
its-fish
                       its-specific
                                                    me
'my specific fish'
    e.g. possessive + quantifier
ſːeʃː saɪmsfɛ nɛmsfɛ
∫zeſz -Ø
                    saim
                                  -sf\epsilon
                                               n\varepsilon m
                                                         -sf\epsilon
fish -NOM.SG tail-fin
                                  -PL.POSS all
                                                         -PL.POSS
fish
                    its-tail-fin -s
                                               its-all
'all of the fish's tail-fins'
    e.g. possessive + quantifier + definiteness + ordinals + adjectives + numbers + recursion
\int e \int it^h nemit^h ansamwe \int limswe anwe simwe amam sim:
ſĸeſĸ
                       n\varepsilon m
                                 -it^h
                                              aŋ-
                                                         saim
                                                                       -w\varepsilon
                                                                                     ∫lims
                                                                                               -w\varepsilon
                                                                                                                        -w\varepsilon
                                                                                                             a\eta
fish
          -SG.POSS all
                                 -SG.POSS second- tail-fin
                                                                       -DU.POSS red
                                                                                               -DU.POSS two
                                                                                                                       -DU.POSS
its-fish
                       its-all
                                              second- its-tail-fin
                                                                                     its-red
                                                                                                             its-two
sim
               -w\varepsilon
                             ama
                                       -m
                                                    sim
specific
               -DU.POSS parent -DU.NOM specific -DU.NOM
```

# Verb Morphology

Verbs have **number** (singular, dual, plural) and **person** (first, second, third), **tense** (past, present, future), **perfectivity** (perfect, imperfect).

### 6.1 Number, Person, Tense

The number, person, and tense are indicated with unique suffixed morphemes, as indicated indicated in the tables below.

PRS	Person	Ending		PST	Person	Ending		FUT	Person	Ending
$\overline{SG}$	1	- $arepsilon  ext{t}^h$		$\overline{SG}$	1	-em		$\operatorname{SG}$	1	-iwi
	2	3-			2	-ema			2	-ini
	3	-a			3	-ama			3	-ima
DU	1.INCL	-ems	<u>-</u>	DU	1.INCL	-emsala	-	DU	1.INCL	-ıla
	1.excl	-emsa			1.excl	- $\epsilon$ msalt $^h$			1.excl	- $\mathrm{ilt}^h$
	2	θιυ-			2	- $v$ л $ heta$ а			2	-1θ
	3	$-\mathrm{lrt}^h$			3	-lin <b>x</b> a			3	-ım
PL	1.INCL	-віз-	•	PL	1.INCL	-818-	-	PL	1.INCL	-ειθί
	1.excl	$-ai\theta$			1.excl	$-ai\theta\epsilon$			1.excl	$-ai\theta i$
	2	-eai			2	-earme			2	-ıθl
	3	$-\mathrm{lit}^h$			3	-linxe			3	-ıml
			•				-			

Table 6.1: Present, past, and future tense verb endings

```
e.g.
```

'You were hearing.'

```
ſœſIJ slixi insa
∫ze∫z -J
               slix
                               ins
fish
                               have -3.SG.PRS
     -PL.ACC some -PL.ACC
fish
               some
                               have
'He has had some fish.'
ſœſIJ slixJ insama
∫ze∫z -.ı
               slix
                               ins
                                      -ama
fish
    -PL.ACC some -PL.ACC have -3.SG.PST
fish
               some
                               have
'He had had some fish.'
ſœſIJ slixi insa
ſœſz -ı
               slix
                               ins
                                      -ima
                      -J
fish -PL.ACC some -PL.ACC have -3.SG.FUT
fish
               some
                               have
'He will have had some fish.'
6.2
        Aspect
Imperfective aspect is marked with the /\text{wat}^h/ suffix (attached behind the number-person-tense morpheme). If
unmarked, then aspect is unspecified.
    e.g.
υmziema
υm:i -εma
swim -2.SG.PRS
swim
'You have swum.'
vmziemawat^h
                  -wat^h
      -єта
swim -2.SG.PRS -IMPF
swim
'You are swimming.'
usiama
USI
       -ama
swim -3.SG.PST
swim
'You had heard.'
{\tt us:} {\tt amawat}^h
USI
       -ama
swim -3.SG.PST -IMPF
swim
```

## Verb Phrases

### 7.1 Adverbs

Adverbs can be formed from adjectives by adding the verb ending to the nominative singular adjective (the stem).

```
e.g.
S:eS: i:aef
ſĸeſĸ -Ø
                 izaef
                         -Ø
fish -SG.NOM
                 quick -SG.NOM
fish
'The fish is quick.'
S:eS: i:aefa lENa
                               l\varepsilon k^h
ſzeſz izaef
fish quick.ADV -3.SG.PRS flap
                                     -3.SG.PRS
fish quickly
'The fish flaps quickly.'
S:eS: i:aef i:aefa lENa
                                       l\varepsilon k^h
∫:e∫: i:aef
             izaef
                                             -a
                           -a
fish quick quick.ADV -3.SG.PRS
                                      flap -3.SG.PRS
fish quick quickly
'The quick fish flaps quickly.'
```

### 7.2 Word Order

Adverbs modifying verbs occur before the verb and agree in number, person, tense, and aspect. e.g.

```
S:eS: i:aefa Um:ia
ſːeʃː iːaef
                           υmːi
fish fast.ADV -3.SG.PRS swim -3.SG.PRS
fish quickly
                           swim
'The fish swims quickly.'
S:eS: s2i:aefa Um:ia
ſːeʃː iːaef
            -a
                      υmri
                                 -a
fish NEG-
            fast.ADV -3.SG.PRS swim -3.SG.PRS
fish not
            quickly
'The fish does not swim quickly.'
```

(Negation is discussed in Section 8.3.)

## Sentences

### 8.1 To Be (Or Not To Be)

Zero copula encoding is mandatory for constructions involving predicate nominals. The order of the nominals is left to the speaker to decide, and tense is understood from context. Ambiguity is resolved through context as well.

```
e.g.
S:eS: SlIms
ſːeʃː ʃlɪms
fish red
fish red
'The fish is red.'
SlIms S:eS:
flms fiefi
red
       fish
       fish
\operatorname{red}
'The fish is red.'
wlAt^h eNek^h
wlat^h
1.SG.NOM.PRON
                    trash
                    trash
'I am/was/will be trash.'
```

### 8.2 Transitive and Intransitive

#### 8.2.1 Active Voice

All sentences are nominative-accusative. For transitive sentences, the subject is in the nominative and the object is in the accusative. For intransitive sentences, the subject is in the nominative. The verb must agree with the subject in number.

```
naUnIlHe slIxHe naUmlinwAt<sup>h</sup>
                                               -lit^h
                                                             -wath
navnıl -fie
                    slix
                            -fie
                                       navm
whale
       -PL.NOM some -PL.NOM
                                               -3.PL.PRS -IMPF
                                       sing
whale
       -S
                    some
                                       sing
'Some whales are singing.'
na
Un<br/>IlHe sl\mathbf{I}xHe sl\mathbf{A}mir !amsinw\mathbf{A}t<br/><sup>h</sup>
                                                                  !amsit^h -it^h
navnıl
                            -fie
        -fie
                    slix
                                       slamiı
whale
         -PL.NOM
                    some -PL.NOM -1.INCL.DU.NOM.PRON
                                                                            -3.PL.PRS -IMPF
whale
                                       two-of-us-but-not-you
        -S
                    some
'Some whales are eating us.'
```

Adpositional phrases follow the subject noun phrase and precede the object.

```
naUnIlHe slIxHe wUlTAsei Um:ilit<sup>h</sup>
```

```
-fie
                                                                                          -lit^h
                     slix
                             -ĥe
navnıl
                                                                    -sei
                                                                                  υmri
whale
                     some
                                                                                  swim -3.PL.PRS
         -PL NOM
                             -PL.NOM water-mass
                                                        \boldsymbol{\text{-}}\mathbf{SG.ADP}
                                                                    -into.POST
whale
                     some
                                         water-mass
                                                                    into
                                                                                  swim
```

'Some whales have swum into the water mass.'

anIlzi:si l2mAsr EmImliwi

anılzi -i -si lamas -ı emml -iwi whale-bone -DU.ADP -using.POST hagfish -SG.ACC attack -1.SG.FUT whale-bone -s using hagfish attack

'I will attack the hagfish using two whale-bones.'

#### 8.2.2 Passive Voice

In passive voice sentences, the agent is indicated by the adpositive + si, while the patient is in the nominative. Passive voice verbs are indicated by prefixing zis to the verb stem and agree with the word in the nominative in number.

e.g.

 $wlat^h simus emimlenwat^h$ 

 $wlat^h$  simv -. emml - $et^h$  - $wat^h$  1.SG.NOM.PRON iceberg -SG.ACC attack -1.SG.PRS -IMPF iceberg attack

'I am attacking the iceberg.'

sim v wlanasi zisemimlawat<sup>h</sup>

simv wlana -si zis-  $\varepsilon miml$  -a  $-wat^h$  iceberg 1.SG.ADP.PRON -by.POST PASS- attack -3.SG.PRS -IMPF iceberg me by attack

'The iceberg is being attacked by me.'

wlat $^h$  simuasi zisemimlenwat $^h$ 

 $wlat^h$  simv -a -si zis  $\varepsilon mml$  - $et^h$  - $wat^h$  1.SG.NOM.PRON iceberg -SG.ADP -by.POST PASS- attack -1.SG.PRS -IMPF iceberg by attack

'I am being attacked by the iceberg.'

Some verbs are automatically in the passive voice, do not take the passive prefix, and cannot be used as an active verb.

e.g.

naunilm wlanasi  $\int yl\theta$ ım

'The whales will be followed by me  $\rightarrow$  I will follow the whales'

### 8.3 Negation

Negation can be expressed in two ways. For sentences containing a verb, the clitic  $/s\Lambda$ -/ is attached to the beginning of the verb phrase. e.g

lamasaı fiei $et^h$ 

lAmas -ar fiei - $\varepsilon t^h$ hagfish -SG.ACC smell -1.SG.PRS hagfish smell

'I have smelled the hagfish.'

```
-\varepsilon t^h
lamas
         -ar
                            ĥеі
                     S\Lambda-
hagfish
                            smell -1.SG.PRS
         -SG.ACC
                    NEG-
                            smell
hagfish
                     not
'I have not smelled the hagfish.'
    For sentences without a verb, 3\varepsilon (no) is added to the end of the sentence. e.g.
wlat^h fief:
wlat^h
                    [sef:
1.SG.NOM.PRON fish
'I am a fish.'
wlAt^h S:eS: ZE
wlat^h
                    ſæſĸ
1.SG.NOM.PRON fish
                    fish
                          no
'I am not a fish.'
    This gives us two different ways to negate time sentences (Section 8.6.1):
anzizim xenia ania ze
          zizim
aŋ-
                        -Ø
                                    x \varepsilon n
                                           -iı
                                                      a\eta
                                                            -i.i
                                                                       3\varepsilon
          falling tide -NOM.SG hour -ACC.DU
two-
                                                            -ACC.DU
                                                                       no
                                                      two
second- rising tide
                                    hour -s
                                                      two
                                                                       no
'It is not 7:00 pm'
anzizım xeniл aniл saınsa
          zizim
aŋ-
                                   x \varepsilon n
                                                                             ins
                                           -i.ī
                                                            -i.ī
                                                      a\eta
                                                                                    -a
          falling tide -NOM.SG hour -ACC.DU
                                                                             have -3.SG.PRS
two-
                                                      two
                                                            -ACC.DU
                                                                       not
second- rising tide
                                    hour -s
                                                      two
                                                                             have
'It is not 7:00 pm'
```

#### Possession 8.4

e.g.

lamasaı safiei $et^h$ 

Possession is shown using the verb ins (have). ins operates like any other transitive verb, taking a subject and direct object. Both alienable and inalienable possessions are treated the same way.

```
unilzii nezi inset^h
                                                  -\varepsilon t^h
υnılzi
                                           ms
                         рез
                         four
whale-bone -PL.ACC
                               -PL.ACC
                                          have -1.SG.PRES
whale-bone
                         four
                                          have
'I have four whale-bones.'
amaı ŋeʒı insem
                                            -\varepsilon t^h
ama
                                     ins
         -.T
                    ŋе3
                          -PL.ACC have -1.SG.PRES
parent -PL.ACC four
                    four
                                     have
'I have four parents.'
saımsi lamasaı inset^h
                                           -\varepsilon t^h
saip^h
                     lлтая
          -si
                               -aı ıns
tail-fin -in.POST hagfish
                                    have -1.SG.PRS
tail-fin in
                     hagfihs
                                    have
'I have a hagfish in my tail-fin.'
```

Time sentences are formed as possessive sentences (see Section 8.6.1).

#### 8.5 Location

Location is marked by a number of postpositions, which take the adpositive case. The most common are  $s \infty$ (in), sei (into), mei (at), min (near), li (through; preposition, not postposition), and ili (below).

ſylθ

-ım

```
wuldsæ umriet^h
                              -\varepsilon t^h
wvl\theta
                       υmri
water-mass -in.Post swim -1.sg.prs
water-mass in
                       swim
'I swim in the water-mass.'
naunilm wulθsei wlanasi ſylθım
naʊnɪl -m
                   wis1\theta
                                            wlana
                                -sei
                                                              -si
whale
       -DU.NOM water-mass -into.POST
                                           1.SG.ADP.PRON -by.POST follow -3.du.fut
whale
                                                             -by.POST follow
                   water-mass into
'I will follow the whales into the water-mass'
enfiamiei zaar usiem
e\eta hap^h
                      zaaı us:
            -mei
                                              -εm
shipwreck -at.Post hear
                            3.SG.ACC.PRON -1.SG.PST
shipwreck at
                            hear
                      it
'I heard it at the shipwreck.'
wulθmaa umriem
w \sigma l \theta
           -тла
                        υmri
                               -εm
shipwreck -near.post swim -1.sg.pst
shipwreck near
                        swim
'I swam near the shipwreck.'
simualı umriem
sim v
         - тlт
                       υmri
                              -єт
iceberg -below.post swim
                             -1.SG.PST
iceberg below
                       swim
'I swam below the iceberg.'
lı wold omriem
                wvl\theta
                             υmːi
                                   -εm
through.PREP water-mass
                            swim -1.SG.PST
through
               water-mass swim
```

Some words are irregular and do not take the adpositive with location words. Two notable examples are 3Em (the part of the ocean reachable by light) and safi (the dark depths of the ocean), which are derived from mermish mythology (mermythology), and are irregular in adpositive and accusative cases and are always inalienable possessors.

```
li zem i:aefiwi um:i:wi
                                                                                                                                                                                                                                           izaef
                                                                                                                                                                                                                                                                                                                    -iwi
                                                                                                                                                                                                                                                                                                                                                                                                                     υmːi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -iwi
                                                                                                                         light-ocean quickly -1.SG.FUT swim -1.SG.FUT
  through.PREP
  through
                                                                                                                                 light-ocean quickly
                                                                                                                                                                                                                                                                                                                                                                                                                  swim
'I will swim quickly through the light-ocean.'
  safisi məmamiwi
  safi
                                                                                                            -si
                                                                                                                                                                                               m 
ightharpoonup m 
i
                                                                                                                                                                                                                                                                                    -iwi
  deep-ocean -in.POST
                                                                                                                                                                                         sleep
                                                                                                                                                                                                                                                                                    -1.SG.FUT
  deep-ocean in
                                                                                                                                                                                             sleep
```

'I swam through the water-mass.'

'I will sleep in the deep-ocean.'

### 8.6 Time

#### 8.6.1 Time as a Possession Sentence

Time sentences take the form of a "has" sentence. A time sentence starts with which tide it is in the nominative, followed by the number of hours (or hour, singular) into the tide in the accusative, then the singular third-person form of the verb to have. The hours can be modified by and half to indicate that it is near the middle of the hour, as it's hard to keep track of exact minutes underwater. It is also valid to use the present third-person verb begins or ends rather than the hours + to have if a new tide has just begun or will begin soon respectively. The to have or one (when only one hour has passed since a new tide) are sometimes elided.

```
1. sazım enga
```

falling tide begin -s

'It is just past 11 am'

### 2. zizīm suīla

zizim - $\varnothing$  sul -a rising -NOM.SG end -3.SG.PRS rising tide end -s

'It is almost 11 am'

#### 3. aŋsaʒım хепл резл ınsa

 $x \varepsilon t^h$  $ak^h$ sazım ins-a ŋez -3.sg.prs twofalling tide -NOM.SG hour -ACC.PL four have -ACC.PL second- falling tide hour -s four has 'It is 3 am'

### 4. anzizim xena anfiemuna insa

 $ak^h$  $x \varepsilon t^h$ zi3m-fie -mʊn ins $a\eta$ -a twofalling tide -NOM.SG hour -ACC.PL two -and -half -ACC.PL have -3.sg.prs half second- rising tide hour two and has 'It is 7:30 pm'

25

#### 5. адгізіт хепл адбетипл

 $ak^h$  $x \varepsilon t^h$ zi3m-fie -mʊn -.T aŋ twofalling tide -NOM.SG hour -ACC.PL -half two -and -ACC.PL second- rising tide hour and half 'It is 7:30 pm'

### 6. sazım xengi hvar insa

 $x \varepsilon t^h$  $sa_3im$ -Ø ĥυ -a.i -a.i ins -a hour -ACC.SG -3.SG.PRS falling tide -NOM.SG one -ACC.SG have falling tide hour has one 'It is noon'

### 7. sazīm xengi insa

#### 8. sazım xenal

sazım  $-\varnothing$   $x\varepsilon t^h$  -ax falling tide -NOM.SG hour -ACC.SG falling tide 'It is noon'

9. zizim xenia ania insa  $x \varepsilon t^h$ -Ø zizim-iı insfalling tide hour -ACC.DU -3.sg.prs -NOM.SG two  $\text{-}\mathrm{ACC.DU}$ have rising tide hour two has 'It is 7:00 am'

Comparison of examples 4 & 5 and 6, 7, & 8 demonstrate omission of to have and one. This language does not mark definiteness or gender, but does mark case and number (singular, dual, plural).

#### 8.6.2 Time as a Noun Phrase

Time can also be expressed through nominal possession in a postpositional phrase. To use a time in a noun phrase, the appropriate tide is the possessor and the number of hours is the possessed (if any hours). e.g.

aŋsaʒıma ŋeʒxɛnasuıs  $ak^h$ sazım nezfalling tide -ADP.SG three.ORD hour -during.POST two--ADP.SG second- falling tide thirdhour during 'at 3 am' ansazımasuıs akh--les sazım falling tide -ADP.SG -before.POST twobefore second- falling tide 'before 11 pm'

### 8.7 Comparison

### 8.7.1 Comparatives

Comparison is done by suffixing *if* to the comparative and the standard, then adding the case ending that agrees in number and case to the comparee NP. Pronoun standards agree with the comparee before suffixing the comparison morpheme. Adjectives modifying the standard also take the suffix, and the listener understands through context and word order which adjective is modifying the standard and which is the comparative.

e.g.

wlat $^h$  izaefif zemif

 $wlat^h$  i:aef - $_{I}$  zem - $_{I}$  - $_{I}$  1.SG.NOM.PRON quick -COMP 2.SG.NOM.PRON -COMP quicker than you

'I am quicker than you.'

wlath isaefif fiefiif flimsif

 $wlat^h$  i:aef -ıf f:ef: -ıf flms -ıf 1.SG.NOM.PRON quick -COMP fish -COMP red -COMP I quicker than fish red

'I am quicker than the red fish.'

 $-\varepsilon t^h$ ſœſz -aı flms-īf ſæſ -ıf -ıf -aı -aı sim-aı insfish -sg.acc red -COMP -SG.ACC fish -SG.ACC that -1.SG.PRS -COMP -COMP -SG.ACC have fish redder than fish that have

'I have a fish that is redder than that fish.'

[e]:aı [e]:aı [e]:faı nemifaı inset<sup>h</sup>

- $\varepsilon t^h$ ses -aı  $\int lms$ ſæſĸ -ıf -ıf -ıf -aı -aı  $n\varepsilon m$ -aı insfish -sg.acc red -COMP -SG.ACC fish -COMP -SG.ACC all -COMP -SG.ACC have -1.SG.PRS fish redder than fish have all

<sup>&#</sup>x27;I have a fish that is redder than all fish  $\rightarrow$  I have the reddest fish'

This last example can also be constructed using superlatives (8.7.2)

Comparative adjectives can be used as adverbs (7.1).

```
f:ef: i:aeffa naomilifa om:ia
f:ef: i:aef -rf -a naomil -rf -a om:i -a
fish quick -COMP -3.SG.PRS whale -COMP -3.SG.PRS swim -3.SG.PRS
fish quick -er whale swim
'The fish swims more quickly than a whale.'
```

#### 8.7.2 Superlatives

Superlatives are formed by suffixing  $\mathit{ifnem}$  to an adjective stem. Superlatives agree with the NPs they modify in number and case.

```
e.g.
wlat<sup>h</sup> izaefifnem
wlat^h
                  izaef
                         -ıfnεm
1.SG.NOM.PRON quick -SUPL
                  quick -est
'I am the quickest.'
ſːeʃː ʃːeʃː -ɪfnɛm iːaef
                           -ıfnεm
fish fish -SUPL
                    quick -SUPL
fish fish
                    quick -est
'The fish is the quickest fish.'
\mathbf{f}ef:ifnemaı flimsifnemaı inset<sup>h</sup>
                                                           -\varepsilon t^h
ses -ifnem -ai
                        \int lims
                                  -ıfnɛm -aı
fish
     -SUPL -SG.ACC red
                                  -SUPL -SG.ACC have -1.SG.PRES
fish
                        reddest
                                                     have
'I have the reddest fish.'
```

Compare this last example to the equivalent construction using comparatives (8.7.1).

Superlative adjectives can be used as adverbs (7.1).

```
j:ej: i:aefifnema um:ia

j:ej: i:aef -ifnem -a um:i -a

fish quick -SUPLP -3.SG.PRS swim -3.SG.PRS
fish quick -est swim

'The fish swims the quickest.'
```

### 8.8 Questions (And Maybe Some Answers)

### 8.8.1 Yes–No Questions

Yes—no questions involving the zero copula indicated by the first word of the sentence—either so if the speaker is indicating an expected 'yes' answer, 5\varepsilon to indicate an expected 'no' answer, or soz\varepsilon if no expectation.

```
sa films fief:
sa wlath fief:
yes red fish
yes red fish
'The fish is red, isn't it'
```

e.g.

```
3\varepsilon flms fief:

3\varepsilon wlat<sup>h</sup> fief:

no 1.SG.NOM.PRON fish

no I fish

'The fish isn't red, is it?'

sag\varepsilon flms fief:

sag\varepsilon wlat<sup>h</sup> fief:

yes-no red fish

'Is the fish red?'
```

Other yes—no questions are formed by moving the verb phrase to the beginning of the sentence (while maintaining all other word order).

e.g.

```
sfa wlana vm:i:niwat^h
                    wlana
                                                         -wat^h
sf_{\Lambda}
                                  υmːi
                                          -ini
                                  swim -2.SG.FUT -IMPF
with.com.pre 1.sg.adp
with
                    me
                                  swim
'You will be swimming with me.'
\mathbf{vm}\mathbf{x}\mathbf{x}\mathbf{n}\mathbf{w}\mathbf{a}\mathbf{t}^{h} sfa wlana
                       -wat^h
υmri
        -ini
                                                     wlana
                                 sf_{\Lambda}
swim -2.SG.FUT -IMPF with.COM.PRE 1.SG.ADP
swim
                                                     me
```

izaefema umziema sfa wlana

'Will you be swimming with me?'

```
i:aef -\varepsilonma vm:i -\varepsilonma sf_{\Lambda} wlana quickly -2.SG.FUT swim -2.SG.FUT -IMPF with.COM.PRE 1.SG.ADP quickly swim with me
```

'Did you swim quickly with me?'

```
!amsawat^h lamas naunilai
```

```
!ams -a -wat^h lAmas naunil -a.r eat -3.SG.PRS -IMPF hagfish whale -SG.ACC eat
```

'Did the hagfish eat the whale?'

Special emphasis can be placed on certain words in a question by suffixing  $/-\theta e/$  to the word in question. For example:

```
li:aefawone\thetae amsawot^h lamos naonilox i:aef -a -wat^h -\thetae !ams -a -wat^h lamos naonil -ax quickly -E.SG.PRS -IMPF -textscq eat -3.SG.PRS -IMPF hagfish whale -SG.ACC quickly eat the whale quickly?'
```

Answers to yes/no questions are either just a sa or  $3\varepsilon$  or else should have the answer (sa/ $3\varepsilon$ ) at the end of the sentence, regardless of the form of the response.

```
films f:ef: sa sa wlat^h f:ef: red fish yes red fish yes 'Yes, the fish is red.'
```

e.g.

```
flims fief: 38
     wlat^h
            ſzeſz
red fish
             no
red fish
             no
'No, the fish is not red.'
lamas naunilai!amsawat^h sa
         navnil -ai
lлтая
                            !ams -a
                                                      sa
hagfish whale
                 -SG.ACC
                                  -3.sg.prs -impf
                           eat
                                                      yes
hagfish whale
                           eat
                                                      yes
'Yes, the hagfish did eat the whale.'
         Wh- Questions
8.8.2
"Wh-" questions ask for an answer that fills a specific part of the sentence. These questions are formed using the
3rd person pronoun with the appropriate number (as judged by the questioner) + /-\theta e/ in place of the word
being questioned, maintaining normal sentence word order. For unknown quantities (how many?), the default
number 12 (at^h) + /-\theta e/ is used instead of the 3rd person pronoun.
    e.q.
zaθe lamasaı!amsawat^h
                                                             -wat^h
                  -\theta e
                      lлтаs
                                           !ams
                                                 -3.SG.PRS
3.SG.NOM.PRON -Q
                      hagfish
                                                             -IMPF
                               -SG.ACC
                                          eat
who
                       hagfish
                                           eat
                                                             -ing
'Who is eating the hagfish?'
lamas zaar\thetae !amsawat<sup>h</sup>
                                                   -wat^h
lлтая
         zaar
                               !ams
                           -\theta e
hagfish 3.SG.ACC.PRON -Q
                                eat
                                      -3.SG.PRS
                                                  -IMPF
hagfish who
                                                  -ing
                                eat
'Who(m) is the hagfish eating?'
lamas zaar\thetae !amsawat<sup>h</sup>
                                                   -wat^h
lлтаs
         3aar
                           -\theta e
                               !ams
hagfish 3.SG.ACC.PRON -Q
                                eat
                                      -3.sg.prs
                                                  -IMPF
hagfish who
                                eat
                                                  -ing
'Who(m) is the hagfish eating?'
naunılaı 3aaθesi εmımlini
navnıl -aı
                                    -\theta e
                                                        εmıml -ini
                                         -si
whale -SG.ACC 3.SG.ADP.PRON -Q
                                         -INSTR.POST
                                                        attack -2.SG.FUT
whale
                  what
                                         using
                                                        attack
'What will you use to attack the whale?'
3aθe amait<sup>h</sup> wlat<sup>h</sup>
                                -it^h
                  -\theta e
                       ama
3a
                                           zein
3.SG.NOM.PRON -Q
                       parent
                               -SG.POSS
                                          2.sg.nom.pron
who
                       parent
                                           you
'Whose parent are you?'
zaaθesus υm:i:ni
zaa
                  -\theta e
                      -sws
                                      υmri
                                      swim -2.SG.FUT
3.SG.ADP.PRON -Q
                      -during.POST
```

when

during

'When are you going to swim?'

swim

### wlanaı зааветші єтітlєта

wlana. 3aa  $-\theta e$  -mu.. emml -ema 1.SG.ACC.PRON 2.SG.ADP.PRON -Q -because-of.POST attack -2.SG.FUT me why because-of attack

'Why did you attack me?'

Answers to Wh-questions are not always complete sentences or phrases, but should agree with the  $/\theta e/$ -word they answer.

e.g.

### $\mathbf{Q}$ : nu zaa $\theta$ e umziila

nv 3aa  $-\theta e$  vm:i -lla to.PREP 3.SG.ADP.PRON -Q swim -1.DU.INCL.FUT to what swim

'Where will we swim to?'

#### A1: nu simua um:iila

nv simv -a vm:i -ıla to.prep iceberg -SG.ADP swim -1.DU.INCL.FUT to iceberg swim

'We will swim to the iceberg.'

#### A2: nv simva

nv simv -a to.prep iceberg -SG.ADP to iceberg 'To the iceberg.'

#### **Α3:** simυα

simu -a iceberg -SG.ADP iceberg

'(To) the iceberg.'

## Communication

### 9.1 Greetings

The most informal greeting, used between people who know each other, is euz. Using this greeting with someone unfamiliar would typically lead to a "you talkin' to me???" reaction, but isn't inherently offensive. This is spoken with a lilting, song-like prosody inspired by whale-calls.

Friendly/informal greetings between strangers are sentences that involve a pleasantry or introduction. The informal greeting euz can be used after a quick introduction.

```
e.g.
```

```
nimv wlat<sup>h</sup> euz
nimv wlat^h
                          eu3
nimU 1.SG.NOM.PRON hello
nimU I
                         hello
'Hello! I'm Nemo.'
sazım aılu
sazım
             aılv
falling-tide warm
falling-tide warm
'Good afternoon.'
zizım aılu
zizim
            aлlv
rising-tide warm
rising-tide warm
'Good morning.'
```

Greetings in passing (not stopping for a conversation) are typically conveyed through body language (a wave of the hand or a quick tail- or fin-flap), but can be vocalized with an alveolar click ( $\parallel$ ).

Formal greeting are used when talking to individuals of note/rank. This includes pod/family leaders, praiseworthy individuals, or subjects of intense flattery. These greetings are well-known, and shortening or changing of these greetings through omission or substitution of words are used mockingly.

```
e.g. the serious ones
```

```
zemaı fiaieth mith naunilai fiaieth zemaı fiai -eth mith naunil -ai fiai -eth 2.SG.ACC.PRON see -1.SG.PRS and-so.CONJ whale -1.SG.ACC see -1.SG.PRS you see and-so whale see 'I have seen you and-so I have seen a whale.'
```

e.g. the not-serious ones

```
zemaı \operatorname{mit}^h navnılar
```

zemaı mı $t^h$  navnıl -aı

2.SG.ACC.PRON and-so.CONJ whale -1.SG.ACC

you and-so whale

'I have seen you and-so I have seen a whale hahahahahahah.'

e.g. the not-serious ones

zemaı fiai $\mathbf{t}^h$  mi $\mathbf{t}^h$  lamasaı fiai $\mathbf{t}^h$ 

zemaı fiai - $\varepsilon t^h$  mı $t^h$  lamas -aı fiai - $\varepsilon t^h$  2.SG.ACC.PRON see -1.SG.PRS and-so.CONJ hagfish -1.SG.ACC see - $\dot{\imath}$ .sg.prs you see and-so hagfish see

'I have seen you and-so I have seen a hagfish (rude!!!).'

### 9.2 Partings

The most informal parting, used between people with basic familiarity with one another, is a:wɛ. Using this parting with someone unfamiliar would typically lead to a "you talkin' to me???" reaction, but isn't inherently offensive. This is spoken with a rising, song-like prosody inspired by whale-calls.

The somewhat less informal parting is used to impart well-wishes on the departee. It is sometimes shortened, since it is a familiar phrase.

e.g.

meli safi umzizni

 $m\varepsilon$ - -li safi vm:i -ini IMP- INE deep-ocean swim -2.SG.FUT in deep ocean swim

'Be safe/bye!'

melisafi

mε- -lı -safi

IMP- INE deep-ocean

in deep

'Be safe/bye!'

Partings in passing (not stopping for a conversation) are typically conveyed through body language (a wave of the arm or a quick tail- or fin-flap), but can be vocalized with an alveolar click ( $\parallel$ ) similarly to greetings.

Formal parting are not typical because if someone's really that important they'll just tell you that you're leaving now (rude) or just swan off. A slightly mocking parting (someone you're not a fan of is swimming off) would be a variant of the formal greeting but modified to reflect that the person is departing.

e.g.

zemaz fiazema  $\operatorname{mit}^h$  məmamema

zemaı fia. -ema  $mit^h$   $məmap^h$  -e $t^h$  2.SG.ACC.PRON see -1.SG.PST and-so.CONJ sleep -1.SG.PST you see and-so sleep

'I saw you and-so I slept (zzzz).'

zeınaı fiл<br/>ıema mıt $^h$  safiлıet $^h$ 

zemaı fiai -ema mıth sa- fiai -eth 2.SG.ACC.PRON see -1.SG.PST and-so.CONJ -NEG see -1.SG.PRES you see and-so not see

'I saw you and-so I don't see.'

### 9.3 Compliments and Insults

### 9.3.1 Compliments

General compliments (not about a particular characteristic) typically either draw from the mermish fascination with whales or highlight a person's place/importance to the pod.

```
e.q.
```

```
zem navnilifnemit^h naxiifnemit^h ne\int zem navnil -ifnem -it^h naxi -ifnem -it^h ne\int 2.SG.NOM.PRON whale -SUPL -SG.POSS huge -SUPL -SG.POSS 1.INCL.PL.NOM.PRON you whale huge -est us
```

'You are our hugest whale. (Wow!! Very nice)'

```
zem naxjifnem
```

zem nax. -ifnem 2.SG.NOM.PRON huge -SUPL you huge -est

'You are the hugest. (Pretty darn nice)'

```
zem naxı
```

zem naxı 2.SG.NOM.PRON huge you huge

'You are huge. (Slightly lukewarm, possibly damning with faint praise)'

```
nem zema zasafıt^hsi Um:iaIT
```

```
nem zema zasaf -ıt^h -si vm:i -aı\theta all 2.sg.Adp.pron shadow -sg.poss -in.post swim -1.excl.pl.prs all you your-shadow in swim
```

#### 9.3.2 Insults

General insults (not about a particular characteristic) typically either draw from the mermish fascination with whales or diminish a person's place/importance to the pod. Comparisons to debris from human existence are also considered particularly insulting because the merms do not appreciate the sloppy presence of humans in the oceans.

e.g.

```
zem navnilifnemit^h naxiifnemit^h nes
```

```
zem navnil -ıfnem -ıth naxı -ıfnem -ıth nef nef 2.SG.NOM.PRON whale -SUPL -SG.POSS huge -SUPL -SG.POSS 1.INCL.PL.NOM.PRON you whale huge -est us
```

#### zem naxmenezifnem

'You are the tiniest.'

```
zein naxinenez
```

```
zem naxmenez -NEG you huge opp
```

'You are tiny.'

<sup>&#</sup>x27;We all swim in your shadow  $\rightarrow$  Your presence makes us safe  $\rightarrow$  You're generally very useful to the pod.'

<sup>&#</sup>x27;You are a dolphin  $\rightarrow$  You are small and fake whale  $\rightarrow$  You're fake and useless'

```
z \in m eyek^h z \in m eyek^h 2.SG.NOM.PRON debris you debris
```

'You are trash/human debris.'

### 9.4 Speech Acts

#### 9.4.1 Commands

Commands are formed by using the clitic  $m\varepsilon$  at the beginning of the sentence with the future tense verb. e.g.

'You will swim with me.'

mesta wlana vimiini

'Swim with me.'

mε∫:e∫:αι fiamini

 $m\varepsilon$ - f:ef: -ax fiam -ini IMP- fish -ACC.SG swallow-whole -2.SG.FUT fish swallow-whole

'Swallow-whole the fish.'

 $m\epsilon\epsilon\eta i\theta l$ 

 $m\varepsilon$ -  $e\eta$  - $\iota\theta l$ IMP- begin -2.PL.FUT

begin

'(Y'all) begin.'

#### 9.4.2 Requests

Requests are formed by moving the verb phrase to the beginning of the sentence (as one would a question) and using the imperative clitic  $m\varepsilon$  (as with a command).

e.g.

sfa zema σιπίινί

 $sf_{\Lambda}$  zema v:mi -iwi with.PREP 2.SG.ADP.PRON swim -1.SG.FUT with you swim

'I will swim with you. statement'

υτπίτωι sfa zema

v:mi -iwi sfa zema

swim -1.SG.FUT with.PREP 2.SG.ADP.PRON

swim with you 'Will I swim with you? question'

mesfa zema vimiiwi

'Let me swim with you. command'

mευ:mi:wi sfa zema

 $m\varepsilon$ - v:mi -iwi sf $_{\Lambda}$  z $\varepsilon$ :ma

IMP- swim -1.SG.FUT with.PREP 2.SG.ADP.PRON

swim with you

'Can I swim with you? request'

#### 9.4.3 Promises

Promises are made by using the first person future tense verb form and the postpositional phrase safiyze, meaning for the sake of safi (the deep-ocean spirit of mythology, or just the deep-ocean itself).

e.g.

safiyıe ∫ie∫iaıεmımliwi

'I promise to eat the fish (I will eat the fish for the sake of safi)'

Promises can also be requested or commanded:

mesafiyie [:e[:aiemimlini

 $m\varepsilon$ -safi-y.ief:e:-a.i $\varepsilon mml$ -iniIMP-deep-ocean-for-the-sake-of.POSTfish-SG.ACCeat-2.SG.FUTdeep-ocean-for-the-sake-offish-eat

'Promise you will eat the fish.'

mE:mImlini safiyae fæfaa

mε- εmml -ini safi -y.ie f:ef: -α.i IMP- deep-ocean eat -2.SG.FUT -for-the-sake-of.POST fish -SG.ACC deep-ocean -for-the-sake-of fish eat

'Do you promise to eat the fish?'

#### 9.4.4 Boasting

The ocean is the ultimate authority, so boasts are often made comparing to the ocean spirits or the movement of the ocean.

e.g.

zımsafie nemfie i:aefiflit $^h$ wlanıflit $^h$ sa<br/>om:ilit $^h$ 

zımsa -he nem -he izaef -ue -ue -he izaef -ue -ue -he izaef -ue -

-3.PL.SG.PRES

swim

'All the currents don't swim faster than me.'

# Sample Narrative

### 10.1 English Text

Marlin and Dory are travelling to Sydney. Dory asks a dark and mysterious fish for directions. Marlin reprimands her while she shouts to the fish.

The fish grows and they see that the fish is.... a whale! Dory sings to the whale.

"Give us directions!!!"

The whale disappears and Marlin is frightened. Dory tells him that whales eat krill, not Marlins.

Suddenly, they see a lot of krill near them.

(...pause for suspense...)

The whale swallows them whole! Marlin frantically attacks the whale's baleen. Suddenly they see that the surface of the water of the whale's mouth is approaching...

The whale flaps its tongue. They hold onto the tongue while Dory begs Marlin trust her and let go. Marlin scolds Dory and sees a huge 32m below him.

(...pause again for suspense...)

He lets go.

The whale swallows them quickly and blows them out into Sydney.

#### 10.2 Mermish Text

maılın  $\Lambda$  nuzi nu sin:ia mıŋɛnlıt $^h$ . nuzi laiqı ʃ:eʃ:a sama  $\Lambda$  ʒɛnaniı mɛa. maılın ʒaqı xœxia suril ʃ:eʃ:aniı sa:i:na. ʃ:eʃ: nɛxmla mɪt $^h$  ap $^h$ ... ʃ:eʃ:αι naunılαı fiλılıt $^h$ . nuzi naunılaniı nauma.

'mɛslani!nix laiqx alzini'

naunil uaamin:<br/>a mit $^h$ mailin unanak $^h$ . nuzi 3<br/>aur amyia ap $^h$ naunili nemi $\mathfrak{fifii}$ sli<br/>xi !amsiml mlut $^h$ mailinui sa!amsiml.

zadsus zenzimia fifii ailai fivilit $^h$ .

(...meanany a Amzini...)

naunil zen:iz fiama. mazlin naunilz filminit $^h$  m $\mathfrak{z}$ amia emimla. zaasus fiaza ap $^h$  naunilaz eŋlima $\mathfrak{y}$ it $^h$  w $\mathfrak{z}$ uuit $^h$  min:a...

naunil 3<br/>aaz ilalait $^h$ lega. ilalai yumlit $^h$ su<br/>iil nuzi mazlinai sa $\theta$ a ap $^h$  3<br/>aasm zium:<br/>ia mit $^h$  sayxim:<br/>a.

maılın nuziaz x $\infty$ xia mlat $^h$  3 $\epsilon$ m naxza 3aazlı finza.

(...meanany se anamzini...)

рита.

naunil zenziz izaefa fiama  $mlat^h$  sinziasei nauzia.

### 10.3 Glosses

1. maılın  $\Lambda$  nuzi nu sin; ia mınenlıt<sup>h</sup>

```
maxlm\Lambdanvnvsin:i-ammpen-ltt^hMarlinand CONJDoryto.PREPSydney-SG.ADPtravel-3.DU.PRSMarlinandDorytoSydneytravel
```

'Marlin and Dory are travelling to Sydney.'

2. nui laiai ſieſia sama λ zenanii mea nvai lai -aı  $3\varepsilon n$ -nia samDory direction -SG.ACC fish -SG.ADP dark -SG.ADP and.CONJ mysterious -SG.ADP -DO.POST Dory direction fish dark mysterious and  $m\varepsilon$ -a request -3.sg.prs request 'Dory asks a dark and mysterious fish for directions.' 3. mailin zagi xœxia suil [ieʃignii saiina maılın zaaı xœxi smil [sef: saxixn-a -niı -a Marlin 3.SG.ACC.PRON reprimand -3.SG.PRES while.CONJ fish -SG.ADP -DO.POST shout reprimand -s while fish to shout -a -3.SG.PRES -S 'Marlin reprimands her while she shouts to the fish.' 4.  $f:ef: nexmla mit^h ap^h f:ef:ai naunilai fialit^h$ ſ!eſ! nexml -a  $mit^h$  $ap^h$ ſĸeſĸ  $f_{\Lambda J}$  -lith navnıl -aı fish grow -3.sg.pres and.conj is? fish -SG.ACC whale -SG.ACC see -3.DU.PRES that fish whale fish grow -S and see 'The fish grows and they see that the fish is a whale.' 5. nuzi naunilaniz nauma nvai navnıl -a -nia navm -aDory whale -SG.ADP -DO.POST sing -3.sg.prs Dory whale sing to -S 'Dory sings to the whale.' 6. meslani!niı laigi alzini mε- slani! -ini -nia lai alz-aı give -2.sg.fut IMP- 1.EXCL.DU.ADP.PRON -DO.POST direction -SG.ACC 118 direction give to 'Give us directions.' 7. naunil usamin'a mit<sup>h</sup>mailin quanak<sup>h</sup> navnil vsamınz  $mit^h$  $maxlın ananak^h$ -a whale NEG- appear -3.SG.PRES and.CONJ Marlin frightened whale disappear -s and Marlin frightened 'The whale disappears and Marlin is frightened.' 8. nozi zada amyaa ap $^h$  naonila nema fifia slixa !amsıml mlat $^h$  maalında sa!amsıml  $ap^h$ navnil -1 пилі заал amyı -a ſιſι slixDory 3.SG.ACC.PRON tells -3.sg.pres is whale -PL.ACC all -PL.ACC krill -PL.ACC some Dory him tell -S that whale -S all krill some  $mlat^h$ maılın -aı sa-!ams !ams -ıml -ıml eat -3.PL.FUT -PL.ACC eat -3.PL.FUT and.CONJ Marlin NEGand Marlin not eat eat 'Dory tells him that whales eat krill, not Marlins.' 9. 3asus 3en:imia 1111 ailai hailit<sup>h</sup>fiлл  $-lit^h$ aila -sws ʒεnːi -тла ſιſι 3.DU.ADP -near.POST krill -PL.ACC -PL.ACC -3.DU.PRES 3.SG.NOM.PRON -at.POST many see them at near krill many see 'Suddenly they see a lot of krill near them.'

#### 10. теапаруле лтгіпі

 $m\varepsilon$ -  $ana\eta$  -y.ie amz -ini imp- i

'Pause for suspense.'

### 11. naunıl zenziz fiama

navnil zenziz fiam -a

whale 3.DU.ACC.PRON swallow-whole -3.SG.PRES

whale them swallow-whole -s

'The whale swallows them whole.'

#### 12. maılın naunılı filminit<sup>h</sup> mıfamıa emimla

maxlın navnıl -ı filmin -ı $\theta^h$  mısami -a  $\varepsilon$ mıml -a

Marlin whale -SG.ACC baleen -SG.POSS frantic -3.SG.PRES attack -3.SG.PRES

Marlin whale baleen frantic -ally attack -s

'Marlin frantically attacks the whale's baleen.'

### 13. zasus fiara ap $^h$ naunilar enlimanit $^h$ wrunt $^h$ min:a

 $ap^h$ -sws -a navnıl -aı  $e\eta lmak^h$  $-it^h$ w.iui 3.SG.NOM. -at.POST -3.sg.pres IS? whale -SG.ACC mouth water-surface see -SG.POSS that whale see mouth water-surface at $-it^h$ min:

-sg.poss approach -3.sg.pres

approach -ing

'Suddenly they see that the surface of the water of the whale's mouth is approaching.'

### 14. navnil zadı ildəri $^h$ lena

naunil zaaı ılala  $-it^h$   $lek^h$  -a

whale 3.SG.ACC.PRON tongue -SG.POSS flap -3.sg.pres

whale it tongue flap -s

'The whale flaps its tongue.'

#### 15. ılalar primlit $^h$ suril nozi marlınar sa $\theta$ a ap $^h$ zaasm riomria mit $^h$ saprimra

 $-lit^h$  $ap^h$ ılala пліт nvii mailin -ai swil $sa\theta$ tongue -SG.ACC hold-onto -3.DU.PRES while Dory Marlin -SG.ACC beg -3.sg.pres while Dory Marlin tongue hold-onto beg to  $mit^h$ лівті -а zaa -sm -3.sg.pres and.CONJ NEG hold-onto -3.sg.pres 3.SG.ADP.PRON -ACCOM.POST rise with rise and not hold-onto

'They hold onto the tongue while Dory begs Marlin to trust her and let go.'

#### 

заа -лы hлл -а

3.SG.ADP.PRON -below.POST see -3.SG.PRES

him below see -s

'Marlin scolds Dory and sees a huge 32m below him.'

#### 17. теапаруле адатгіні

 $m\varepsilon$ - anan -yie an- 
IMP- fear -for-the-sake-of.POST two- pause -2.SG.FUT

fear for again pause

'Pause again for suspense.'

18. ѕлулта

```
SA- ŋ.m: -a
NEG- hold-onto -3.SG.PRES
not hold-onto -s
'He lets go.'
```

19. naunil zenziz izaefa fiama ml $at^h$  sinziasei nauzia

```
mlat^h
                         izaef
                                                                                   sinxi
navnıl zenziz
                                -a
                                                                                            -sei
whale
                        quick -3.SG.PRES
                                            swallow-whole -3.SG.PRES
                                                                        and.CONJ
                                                                                   Sydney
       3.DU.ACC.PRON
                                                                                            -into.post
whale
                         quick -ly
                                            swallow-whole -s
                                                                        and
                                                                                   Sydney
       them
navzi
        -a
exhale
       -3.SG.PRES
blow
       -s
```

### 10.4 Narrative Choices

- 1. The story is told in present tense because that's how stories are told.
- 2. **Text:** The mermish language has no written form, so punctuation and formatting is borrowed from English to emulate the spoken form of this story. Exclamation points were included in the English text but not in the Mermish text to avoid confusion with the IPA symbol.
- 3. The word *lai* means "direction" as in "advice or guidance", but is translated as "directions" as in "course or route" in English. The switch from singular in the Mermish to plural in English is not a mistake.
- 4. Sentence 9: 3aasus literally translates to "at it (time)", meaning "at that time" or "immediately"
- 5. Sentence 12: The water surface falling happened in the movie but it's also a metaphor for danger!!
- 6. **Sentence 14:** The direct translation of "trust" is "swim up with", as swimming close to the surface is considered dangerous and thus one should only do so with someone trusted to be alert and able to defend themselves.
- 7. **Sentence 15:** The phrase "he sees a huge 3ɛm below him" is an idiom meaning that he saw that he was in a very dangerous situation (sort of like the idiom "the alarm bells started going off"). This comes again from the idea that the closer to surface of the ocean, the more dangerous. If someone is close to the surface of the ocean, when they look down they'll see more of 3ɛm, or the part of the ocean reachable by light, below them than if they were deeper down (though really there should have been way more clues..). Thus, looking down and seeing a ton of 3ɛm-water below you would tip you off that you're in a dangerous position. The idiom is also sometimes shortened to "sees a big of 3ɛm" (zɛm naxıa hʌıa) with the "below x" understood.

<sup>&#</sup>x27;The whale swallows them quickly and and blows them into Sydney.'

# Appendix A

# Lexicon

IPA	Part of Speech	English Translation
awe	greeting	goodbye
amuni	verb	scratch/claw
$\mathrm{anak}^h$	noun	fright
$\mathrm{ananak}^h$	adjective/adverb	frightened
εmıml	verb	attack
hai	verb	see
ĥεni	noun	typhoon/ocean storm
ែ	noun	one
$\widehat{ ext{huts}}$	noun	twenty four
$_{ m fiam}$	verb	swallow whole
fiei	verb	smell
ĥі	noun	nine
ıns	verb	have
$\mathfrak{p}\mathfrak{1}\mathfrak{a}\mathfrak{p}^h$	noun	finger
ŋɹɪmː	verb	hold
ŋeʒ	noun	four
∫ı∫ı	noun	krill
∫xe∫x	noun	fish
∫ylθ	verb	follow (passive)
υmːi	verb	swim
υnılzi	noun	whale
បនរ	verb	hear
3εm	noun	light-ocean
<sub>3</sub> εni	adjective/adverb	9
zīmsa	noun	deep-sea current
zasaf	noun	shadow
ııum:i	verb	rise (swim up)
лli	postposition	below (location)
$\operatorname{cemp}^h$	noun	six
!ams	verb	eat
Λ	conjunction	and (nominal conjunction)

IPA	Part of Speech	English Translation
$\Lambda mz$	verb	pause/stop/rest
aılu	adjective/adverb	warm
arŋ	noun	day
aı	noun	week
aŋsaʒım	noun	second falling tide (11:00 pm)
aŋziʒɪm	noun	second rising tide (5:00 pm)
$ak^h$	noun	two
alz	verb	give
amyıa	verb	tell/report
anfieriə	noun	nineteen
anfiersl	noun	twenty
anfiefii	noun	twenty one
anfieŋeʒ	noun	sixteen
anfieu .	noun	thirteen
anfieæmp $^h$	noun	eighteen
anfiea	noun	fourteen
anfiefuf	noun	twenty three
anfieis	noun	twenty two
anfiem $\mathbf{v}\mathbf{t}^h$	noun	seventeen
anfiesa	noun	fifteen
anınem	noun	flesh/meat
$ap^h$	particle	that/to (used in indirect speech/experience)
$\mathrm{at}^h$	noun	twelve
eiŋ	verb	begin
eŋĥap $^h$	noun	shipwreck
eŋek $^h$	noun	human trash/debris
eŋlımak $^h$	noun	water-surface
eia	noun	seven
esl	noun	eight
euʒ	greeting	hello
filmin	noun	baleen
fʊf	noun	eleven
ixaef	adjective/adverb	quick/quickly
$ir^h$	noun	ten
$\mathrm{l}\varepsilon\mathrm{k}^h$	verb	flap
lı	preposition	through (location)
$\operatorname{lagt}^h$	verb	bite
lamas	noun	hagfish
laz	verb	chew
lai	noun	direction/advice
les	postposition	before (time)
mɹ∫amı	adjective/adverb	frantic/desperate
тла	postposition	near (location)
məmei	noun	tuna
$\mathrm{mit}^h$	conjunction	and-so/therefore (verbal conjunction)
mıŋɛn	verb	travel/migrate
mini	verb	appear/show up
$\mathrm{m} \mathrm{v} \mathrm{t}^h$	noun	five

IPA	Part of Speech	English Translation
maılın	proper noun	Marlin
mei	postposition	at (location)
$\mathrm{mlat}^h$	conjunction	and-then (verbal conunction)
	v	,
naxı	adjective/adverb	huge
neŋnak $^h$	noun	eye of storm/whirlpool
nexm $l$	verb	grow
nυ	preposition	to (location)
nuai	proper noun	Dory
navnıl	noun	whale
naum	verb	$\operatorname{sing}$
naʊzi	verb	blow/exhale
sœ	postposition	in (location)
safi	noun	dark-ocean
$\operatorname{sam}$	adjective/adverb	dark
sula	verb	end
sa	noun	three
$sa\theta$	verb	beg/plead
$\operatorname{saxt}^h$	noun	thirty six
$\operatorname{saip}^h$	noun	tail-fin
$sa_{3}m$	noun	falling tide (11:00 am)
sei	postposition	into (location)
$\mathrm{sm}$	postposition	with (accompaniment)
$\operatorname{sim} \sigma$	noun	iceberg
$\sin xi$	proper noun	Sydney
sizm	noun	rising tide (5:00 am)
swil	adverb	while
suis	postposition	at (time)
wσlθ	noun	water-mass
wim	noun	mouth
xen	noun	hour
xœxi	verb	reprimand/scold

# Appendix B

# Hand and labelled fingers

