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Tonal marking of absolutive case in Samoan

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The claim

Samoan has a high edge tone that marks absolutive case.

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Puzzle 1: Samoan is not a tone language

Puzzle: Samoan has no lexical tonal contrasts;
all other inflectional morphemes are segmental.

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Puzzle 1: Samoan is not a tone language

> **Puzzle: Samoan has no lexical tonal contrasts;**
> **all other inflectional morphemes are segmental.**

- Only 15/1236 (1.2%) of Austronesian languages reported to have lexical tone (Oceanic Linguistics No. 24, 1993, Remijsen 2001)

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Puzzle 1: Samoan is not a tone language

> **Puzzle: Samoan has no lexical tonal contrasts;**
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- Only 15/1236 (1.2%) of Austronesian languages reported to have lexical tone (Oceanic Linguistics No. 24, 1993, Remijsen 2001)
  - No Polynesian languages

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Puzzle 1: Samoan is not a tone language

**Puzzle: Samoan has no lexical tonal contrasts;
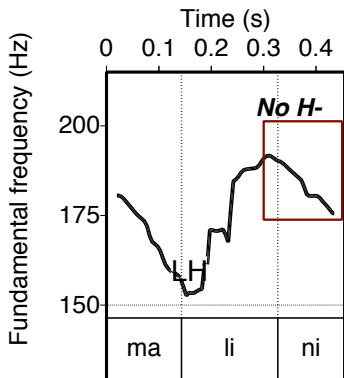all other inflectional morphemes are segmental.**

- Only 15/1236 (1.2%) of Austronesian languages reported to have lexical tone (Oceanic Linguistics No. 24, 1993, Remijsen 2001)
  - No Polynesian languages
  - Many in contact with non-Austronesian tonal languages

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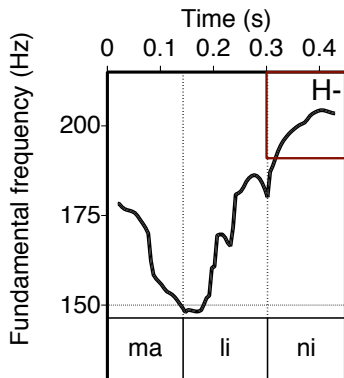# Puzzle 1: Samoan is not a tone language

> **Puzzle: Samoan has no lexical tonal contrasts;**
> **all other inflectional morphemes are segmental.**

- Only 15/1236 (1.2%) of Austronesian languages reported to have lexical tone (Oceanic Linguistics No. 24, 1993, Remijsen 2001)
  - No Polynesian languages
  - Many in contact with non-Austronesian tonal languages
- ?? with grammatical tonal marking

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H- precedes absolutive argument!

▷ [LH* not followed by H-]

▷ [LH* followed by H-]

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Puzzle 2: Localization of absolutive high

Puzzle: Why would the absolutive case head be associated to the word preceding the absolutive argument?

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The elaborated claim

Samoan has a high edge tone that marks absolutive case.

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The elaborated claim

> **Samoan has a high edge tone that marks absolutive case.**

1. **Distribution**: a high edge tone (H-) always precedes absolutive arguments
   - where the absolutive particle *ia* is (il)licit, the H- is present (absent)

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Samoan has a high edge tone that marks absolutive case.

1 **Distribution**: a high edge tone (H-) always precedes absolutive arguments
   - where the absolutive particle *ia* is (il)licit, the H- is present (absent)

2 **Grammatical source of tone**: inflectional morphology

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The elaborated claim

> **Samoan has a high edge tone that marks absolutive case.**

1 **Distribution**: a high edge tone (H-) always precedes absolutive arguments
  - where the absolutive particle *ia* is (il)licit, the H- is present (absent)

2 **Grammatical source of tone**: inflectional morphology

3 **Tonal source of tone**: tonal reassociation of pitch accent on absolutive particle *ia*

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Case marking

(1) **Transitive sentence** ▷

na   lalaŋa **e   le   malini H- (ia) le   mamanu**.
PAST weave **erg det.sg marine abs (abs) det.sg design**

'The marine weaved the design.'

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Case marking

(1) **Transitive sentence** ▷

na   lalaŋa **e   le   malini H- (ia) le   mamanu**.
PAST weave **erg det.sg marine abs (abs) det.sg design**

'The marine weaved the design.'

(2) **Intransitive sentence** ▷

na   ŋalue **H- (ia) le   malini** (i le   mamanu).
PAST work **abs (abs) det.sg marine obl det.sg design**

'The marine worked (on the design).'

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On the particle ia

Mosel and Hovdhaugen (1992):

> *The absolutive preposition* **ia** *is* **always optional**. *It is mostly used before proper names of persons and is seldom used in literary texts. (p. 143)*

Vonen (1988):

> *The absolutive marker [*ia*] is much less used in Samoan than in Tokelauan. In Samoan, it is* **always optional** *and when used, it mostly occurs in the same position as TOK [Tokelauan] ia. SAM ia, however, can be followed by an article, especially after hesitation. See Hovdhaugen (1987:154-155).*

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Case marking exponence and word order

- **Ergative e** rarely used in *tautala leaga* (Mosel and Hovdhaugen 1992, p. 9)
- Ochs (1982): presence of **e** for postverbal agents ranged from 20% between family members to 75% in informal interactions between non-family members

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Case marking exponence and word order

- **Ergative e** rarely used in *tautala leaga* (Mosel and Hovdhaugen 1992, p. 9)
- Ochs (1982): presence of **e** for postverbal agents ranged from 20% between family members to 75% in informal interactions between non-family members
- Ochs (1982): word order choices may also be conditioned in part by social factors; both VSO and VOS word orders common

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Overview of Samoan prosody

- basic primary stress pattern: moraic trochee at right edge
  (Zuraw, Yu, and Orfitelli 2014)
  - ('manu) 'bird' ▷, ma('lini)
  - la('vaː) 'energized' ▷

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Overview of Samoan prosody

- basic primary stress pattern: moraic trochee at right edge (Zuraw, Yu, and Orfitelli 2014)
  - (ˈmanu) 'bird' ▷, ma(ˈlini)
  - la(ˈvaː) 'energized' ▷
- Intonational inventory in autosegmental-metrical/ToBI framework (Orfitelli and Yu 2009, Calhoun 2015)

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- basic primary stress pattern: moraic trochee at right edge (Zuraw, Yu, and Orfitelli 2014)
    - (ˈmanu) 'bird' ▷, maˈini
    - laˈvaː) 'energized' ▷
- Intonational inventory in autosegmental-metrical/ToBI framework (Orfitelli and Yu 2009, Calhoun 2015)
    - default pitch accent: **LH*** rise over mora receiving primary stress

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  (Zuraw, Yu, and Orfitelli 2014)
  - ('manu) 'bird' ▷, ma('lini)
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- Intonational inventory in autosegmental-metrical/ToBI framework
  (Orfitelli and Yu 2009, Calhoun 2015)
  - default pitch accent: **LH*** rise over mora receiving primary stress
  - Sentence medial **H**- edge tones in lists, coordination, clefted
    declaratives, and at prosodic junctures

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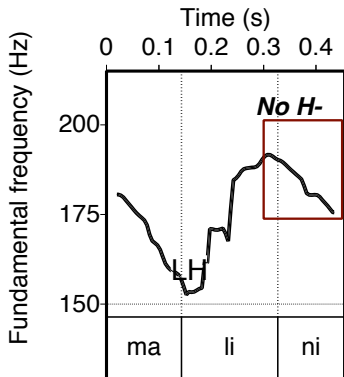The source of the absolute H-
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Overview of Samoan prosody

- basic primary stress pattern: moraic trochee at right edge
  (Zuraw, Yu, and Orfitelli 2014)
  - ('manu) 'bird' ▷, ma('lini)
  - la('vaː) 'energized' ▷
- Intonational inventory in autosegmental-metrical/ToBI framework
  (Orfitelli and Yu 2009, Calhoun 2015)
  - default pitch accent: **LH*** rise over mora receiving primary stress
  - Sentence medial **H**- edge tones in lists, coordination, clefted
    declaratives, and at prosodic junctures
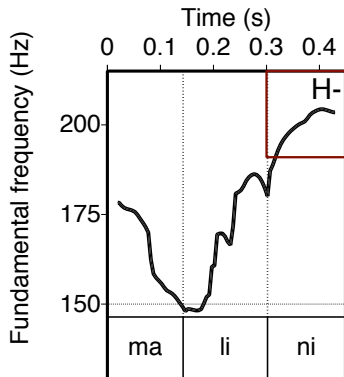 - Typically utterance final low tone in declaratives

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Pitch accents and edge tones

▷ [LH* not followed by H-]

▷ [LH* followed by H-]

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Fieldwork/data

- All consultants from (Western) Samoa
- Primary consultant: born in Samoa, moved to United States at age 15, age 19-23 during elicitations
  - Data collected in 2008-2009, and later in additional elicitation sessions through 2015

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- Primary consultant: born in Samoa, moved to United States at age 15, age 19-23 during elicitations
  - Data collected in 2008-2009, and later in additional elicitation sessions through 2015
- Work with 5 additional speakers in trips to Apia, Samoa in November 2011 and to Carson, CA in January 2012

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Fieldwork/data

- All consultants from (Western) Samoa
- Primary consultant: born in Samoa, moved to United States at age 15, age 19-23 during elicitations
  - Data collected in 2008-2009, and later in additional elicitation sessions through 2015
- Work with 5 additional speakers in trips to Apia, Samoa in November 2011 and to Carson, CA in January 2012
- Data primarily elicited in *tautala lelei* (formal language)
- Data elicited out-of-the-blue, unless pronominal elements present, in which case referent introduced

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Fundamental frequency extraction and analysis

- Segmentation and intonational (ToBI) transcription in Praat

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Fundamental frequency extraction and analysis

- Segmentation and intonational (ToBI) transcription in Praat
- Fundamental frequency (f0) extraction using Praat and Snack algorithms in VoiceSauce automated voice measurement extraction software (Keating et al. 2011)

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Fundamental frequency extraction and analysis

- Segmentation and intonational (ToBI) transcription in Praat
- Fundamental frequency (f0) extraction using Praat and Snack algorithms in VoiceSauce automated voice measurement extraction software (Keating et al. 2011)
- Analysis of f0, plotting in R

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- V [e S] [H- (ia) O]

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- V [H- (ia) O] [e S]

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- V [H- (ia) O] [e S]

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- V [H- (ia) S] ([i DP])

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- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

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Intransitive sentences

- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [ʔo *ia S] *ia H- [V H- (ia) O]

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- V ([i DP]) [H- (ia) S]

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- V [e S] [H- (ia) O]
- V [H- (ia) O] [e S]

Intransitive sentences

- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [?o *ia S] *ia H- [V H- (ia) O]
- [?o *ia S] *ia H- [V (i DP)]

Absolute nominal phrases

- Specific/nonspecific nominals

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- V [H- (ia) O] [e S]

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- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [?o *ia S] *ia H- [V H- (ia) O]
- [?o *ia S] *ia H- [V (i DP)]

Absolute nominal phrases

- Specific/nonspecific nominals
- Common/proper nominals

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- V [H- (ia) O] [e S]

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- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [ʔo *ia S] *ia H- [V H- (ia) O]
- [ʔo *ia S] *ia H- [V (i DP)]

Absolute nominal phrases

- Specific/nonspecific nominals
- Common/proper nominals
- Appositives

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- V [e S] [H- (ia) O]
- V [H- (ia) O] [e S]

Intransitive sentences

- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [ʔo *ia S] *ia H- [V H- (ia) O]
- [ʔo *ia S] *ia H- [V (i DP)]

Absolutive nominal phrases

- Specific/nonspecific nominals
- Common/proper nominals
- Appositives
- Postverbal pronominals

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- V [e S] [H- (ia) O]
- V [H- (ia) O] [e S]

Intransitive sentences

- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [?o *ia S] *ia H- [V H- (ia) O]
- [?o *ia S] *ia H- [V (i DP)]

Absolute nominal phrases

- Specific/nonspecific nominals
- Common/proper nominals
- Appositives
- Postverbal pronominals
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- V [e S] [H- (ia) O]
- V [H- (ia) O] [e S]

Intransitive sentences

- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [ʔo *ia S] *ia H- [V H- (ia) O]
- [ʔo *ia S] *ia H- [V (i DP)]

Absolutive nominal phrases

- Specific/nonspecific nominals
- Common/proper nominals
- Appositives
- Postverbal pronominals
- Nominalizations

Pseudo noun incorporation

- V *ia O [H- (ia) S]

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Nominalizations
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Some highlights from distributional evidence

1. Nominalizations
2. Pseudo noun incorporation

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Nominalizations: H- on nominalized verbs

(3) e   iloa-atu **e   le   malini H- (ia) [le**
     PRES spot   **erg det.sg marine abs (abs)** DET.SG
     momoli-ina o   le   malala] i   le   ala
     deliver-INA GEN DET.SG charcoal OBL DET.SG street

     'The marine spots the delivery of the charcoal in the street.'

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Nominalizations: H- on nominalized verbs

(3) e   iloa-atu **e   le   malini H- (ia) [le**
     PRES spot   **erg det.sg marine abs (abs)** DET.SG
     momoli-ina o   le   malala] i   le   ala
     deliver-INA GEN DET.SG charcoal OBL DET.SG street

     'The marine spots the delivery of the charcoal in the street.'

(4) e   faʔaloŋoloŋo **H- (ia)   le   malini [i   le**
     PRES listen   **abs (abs) det.sg marine** OBL DET.SG
     momoli-ina o   le   malala] i   le   ala
     deliver-INA gen det.sg charcoal OBL DET.SG street

     'The marine listens to the delivery of the charcoal in the street.'

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Nominalizations: H- on arg inside nominalization

(5) e   iloa-atu e   le   malini H- (ia) [le   momoli-ina
    PRES spot   erg det.sg marine abs (abs) DET.SG deliver-INA
    o   le   malala] i   le   ala
    gen det.sg charcoal OBL DET.SG street

    'The marine spots the delivering of the charcoal in the street.'

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Nominalizations: H- on arg inside nominalization

(5) e   iloa-atu e   le   malini H- (ia) [le   momoli-ina
     PRES spot   erg det.sg marine abs (abs) DET.SG deliver-INA
     o   le   malala] i   le   ala
     gen det.sg charcoal OBL DET.SG street

     'The marine spots the delivering of the charcoal in the street.'

(6) ... [le   momoli-ina e   le   liona **H- (ia) le**
     ... DET.SG deliver-INA erg DET.SG lion **abs (abs) det.sg**
     manini] i   le   ala.
     fish   OBL DET.SG street

     'The marine spots the delivering of the fish by the lion in the
     street.'

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Nominalizations: H- on arg inside nominalization

(7) [le momoli-ina **o** **le** **malala**]
  DET.SG deliver-INA **gen det.sg charcoal**

(8) [le momoli-ina e le liona **H-** **le** **manini**]
  DET.SG deliver-INA erg DET.SG lion **abs det.sg fish**

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Nominalizations: H- on arg inside nominalization

(7) [le   momoli-ina **o   le   malala**]
     DET.SG deliver-INA **gen det.sg charcoal**

(8) [le   momoli-ina e   le   liona **H- le   manini**]
     DET.SG deliver-INA erg DET.SG lion **abs det.sg fish**

(9) e   leaŋa H- (ia) [le   lalaŋa mamanu **a   malini**]
     PRES bad   abs (abs) DET.SG weave design **gen marine**
     i   le   afiafi
     OBL DET.SG afternoon
     'The marines' weaving of the design is bad in the afternoon.'

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Nominalizations: H- on arg inside nominalization

(7) [le momoli-ina **o le malala**]
DET.SG deliver-INA **gen det.sg charcoal**

(8) [le momoli-ina e le liona **H- le manini**]
DET.SG deliver-INA erg DET.SG lion **abs det.sg fish**

(9) e leaŋa H- (ia) [le lalaŋa mamanu **a malini**]
PRES bad abs (abs) DET.SG weave design **gen marine**
i le afiafi
OBL DET.SG afternoon
'The marines' weaving of the design is bad in the afternoon.'

See Collins (2014) on distribution of alienable a-/ inalienable
o-possessives in nominalizations as evidence for tripartite case system in
Samoan following Legate (2008).

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Distribution of H- with pseudo noun incorporation

(10) VSO, plural object, no pseudo noun incorporation

na momoli **e le malini H- (ia) malala i**
PAST deliver **erg det.sg marine abs (abs) charcoal obl**
le teine
det.sg girl

'The marine delivered the bags of charcoal to the girl.'

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Distribution of H- with pseudo noun incorporation

(10) VSO, plural object, no pseudo noun incorporation

na momoli **e le malini H- (ia) malala i**
PAST deliver **erg det.sg marine abs (abs) charcoal obl**
le teine
det.sg girl

'The marine delivered the bags of charcoal to the girl.'

(11) VOS, pseudo noun incorporation

na momoli ***ia** malala **H- (ia) le malini i**
PAST deliver ***abs** charcoal **abs (abs) det.sg marine obl**
le teine
det.sg girl

'The marine charcoal-delivered to the girl.'

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Bigger pseudo-incorporated objects too!

(12) na   [**momoli malala** H-   **ma sioka lanu moana**] **H-**
      PAST deliver   charcoal CONJ CONJ chalk color sea   **abs**
      (ia) le   malini i   le   teine
      (abs) det.sg marine OBL DET.SG   girl

'The marine **charcoal-and-blue-chalk-delivered** to the girl.'

*See Massam (2001) for syntactic analysis of pseudo noun incorporation
(in Niuean).*

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H- on pseudo incorporated object?

(13) VSO, plural object, no pseudo noun incorporation

na   **momoli** ★ **e**   **le**   **malini** **H- (ia)** **malala** **i**
PAST deliver   **erg** **det.sg** **marine** **abs** **(abs)** **charcoal** **obl**

le   **teine**
det.sg **girl**

'The marine delivered the bags of charcoal to the girl.'

(14) VOS, pseudo noun incorporation

na   **momoli** ★ ***ia**   malala   **H- (ia)** **le**   **malini** **i**
PAST deliver   ***abs** charcoal **abs** **(abs)** **det.sg** **marine** **obl**

le   **teine**
det.sg **girl**

'The marine charcoal-delivered to the girl.'

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No H- on pseudo incorporated object!

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Pseudo noun incorporation
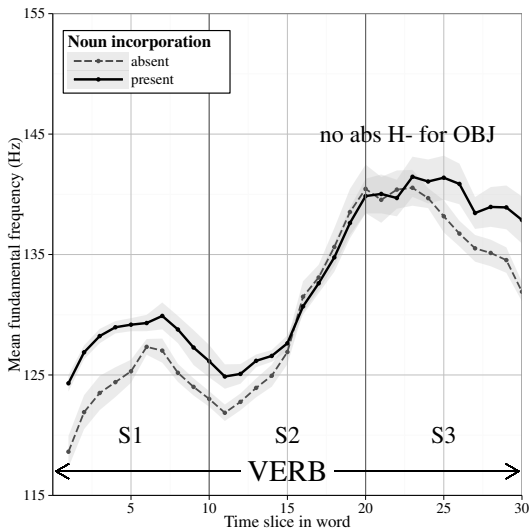
H- on subject in pseudo noun incoporation?

(15)   VSO, plural object, no pseudo noun incorporation

na	momoli	**e**	**le**	**malini**	**H-**	**(ia)**	malala	★	**i**
PAST	deliver	**erg**	**det.sg**	**marine**	**abs**	**(abs)**	charcoal		**obl**

le	**teine**
det.sg	**girl**

'The marine delivered the bags of charcoal to the girl.'

(16)   VOS, pseudo noun incorporation

na	momoli	***ia**	malala	★	**H-**	**(ia)**	**le**	**malini**	**i**
PAST	deliver	***abs**	charcoal		**abs**	**(abs)**	**det.sg**	**marine**	**obl**

le	**teine**
det.sg	**girl**

'The marine charcoal-delivered to the girl.'

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Nominalizations
Pseudo noun incorporation

H- on subject in pseudo noun incorporation!

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Nominalizations
Pseudo noun incorporation

Overview of H- and ia distribution

Transitive sentences

- V [e S] [H- (ia) O]
- V [H- (ia) O] [e S]

Intransitive sentences

- V [H- (ia) S] ([i DP])
- V ([i DP]) [H- (ia) S]

Non verb-initial sentences

- [ʔo *ia S] *ia H- [V H- (ia) O]
- [ʔo *ia S] *ia H- [V (i DP)]

Absolutive nominal phrases

- Specific/nonspecific nominals
- Common/proper nominals
- Appositives
- Postverbal pronominals
- Nominalizations

Pseudo noun incorporation

- V *ia O [H- (ia) S]

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Against a phonological source for the abs H

Claim: Phrase edge before absolute must come from some fact about the prosodic placement of an absolute argument.

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Against a phonological source for the abs H

Claim: Phrase edge before absolutive must come from some fact about the prosodic placement of an absolutive argument.

- But Samoan abs H- always present regardless of linear position of absolutive or size/length of the phonological material preceding it

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A syntactic source?

Claim: Prosodic phrase edge before absolutives coincides with a syntactic constituent edge of some kind.

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A syntactic source?

Claim: Prosodic phrase edge before absolutives coincides with a syntactic constituent edge of some kind.

- **H- does not target fixed syntactic position**
  - Insensitivity to word order variation in ditransitives

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A syntactic source?

Claim: Prosodic phrase edge before absolutives coincides with a syntactic constituent edge of some kind.

- **H- does not target fixed syntactic position**
  - Insensitivity to word order variation in ditransitives
- **H- does not appear before implicit absolutives**:
  - Extraction of absolutives out of relative clauses: no H- (or *ia*) "left behind" in downstairs clause
  - *pro* drop of absolutives

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A pragmatic source?

Claim: The absolute H- is the expression of something systematic about information structure (informational focus, contrastive focus,...)

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A pragmatic source?

> **Claim: The absolute H- is the expression of something systematic about information structure (informational focus, contrastive focus,...)**

Insensitivity to focus conditions:

- Appears whether context is broad focus ('What happened earlier'), question focus on the agent or direct object, or contrastive focus on the agent or direct object (Calhoun 2015)

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Puzzle 1: Samoan is not a tone language

Puzzle: Samoan has no lexical tonal contrasts; all other inflectional morphemes are segmental.

What is the grammatical source of the absolute high?

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Tonal reassociation from absolutive ia

Idea: The source of the H- is the tone associated with the pitch accent on absolutive ia.

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Tonal reassociation from absolutive ia

> **Idea: The source of the H- is the tone associated with the pitch accent on absolutive ia.**

Monomoraic ergative **e**, oblique **i**, genitive **a, o** are not stressed and so do not provide a source tone for a comparable tonal reassociation process.

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Synchronic alternation in exponence of genitive case

Synchronic alternation in exponence of genitive case morpheme in Bamileke-Dschang (Tadadjeu 1974, Hyman 1985)

- 'N_1 of N_2', e.g /sə́ŋ è sə́ŋ/ 'bird of bird'

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- Associative marker /é/ or /è/ "usually drops out in running speech" (Hyman 1985)

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- Associative marker /é/ or /è/ "usually drops out in running speech" (Hyman 1985)
- /sə́ŋ ŋ́ ꜜsə́ŋ/ (assimilation) or /sə́ŋ ꜜsə́ŋ/ (deletion), where the orphaned genitive L is the source of the downstep

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The Samoan parallel

- Segmental deletion of case markers typical in *tautala leaga*
- Absolutive *ia* always optional

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The Samoan parallel

- Segmental deletion of case markers typical in *tautala leaga*
- Absolutive *ia* always optional
- Segmental deletion of *ia* → orphaned absolutive H

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Idea: The source of the H- is the tone associated with the pitch accent on absolutive ia.

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Tonal reassociation from absolutive ia

Idea: The source of the H- is the tone associated with the pitch accent on absolutive ia.

- Synchronic alternation in exponence of absolutive case head:
  - As *ia*, with its pitch accent

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Tonal reassociation from absolutive ia

Idea: The source of the H- is the tone associated with the pitch accent on absolutive ia.

- Synchronic alternation in exponence of absolutive case head:
  - As *ia*, with its pitch accent
  - As H- (with segmental deletion)

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Tonal reassociation from absolutive ia

> **Idea: The source of the H- is the tone associated with the pitch accent on absolutive ia.**

- Synchronic alternation in exponence of absolutive case head:
  - As *ia*, with its pitch accent
  - As H- (with segmental deletion)
- Diachronic loss of absolutive *ia*, leaving orphaned H- as only exponent

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Puzzle 2: Localization of the absolutive high

Puzzle: Why would the absolutive case head be associated to the word preceding the absolutive argument?

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Puzzle 2: Localization of the absolutive high

Puzzle: Why would the absolutive case head be associated to the word preceding the absolutive argument?

Idea: by docking to the left, orphaned tone guaranteed to land on adjacent tone bearing unit.

Samoan phonotactics allow only vowels word-finally.

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Puzzle 2: Localization of the absolute high

Puzzle: Why would the absolutive case head be associated to the word preceding the absolutive argument?

Idea: All Samoan case heads are prosodically grouped to the left.

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Puzzle 2: Localization of the absolute high

Puzzle: Why would the absolute case head be associated to the word preceding the absolute argument?

Idea: All Samoan case heads are prosodically grouped to the left.

Implication: syntax-prosody **boundary paradox**!

- ○ Syntax: [V] [CASE DET.SG N]
- ○ Prosody: (V CASE) (DET.SG N)

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The banality of the boundary paradox

- Evidence from vowel quality that monomoraic case markers like **e** are grouped with preceding prosodic material

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The banality of the boundary paradox

- Evidence from vowel quality that monomoraic case markers like **e** are grouped with preceding prosodic material
- Himmelmann (2014): pattern of grammatical proclitics being phonological enclitics (but not the opposite) is in fact the norm in natural language

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The banality of the boundary paradox

- Evidence from vowel quality that monomoraic case markers like **e** are grouped with preceding prosodic material
- Himmelmann (2014): pattern of grammatical proclitics being phonological enclitics (but not the opposite) is in fact the norm in natural language
  - Speech planning? Fxn words have high frequency and predictability ⇒ planned even before the next unit

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The banality of the boundary paradox

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  - Speech planning? Fxn words have high frequency and predictability ⇒ planned even before the next unit
- Enforced by **prosodic markedness constraints** ranked above syntax-prosody match constraints, e.g., "don't start a prosodic constituent with a weaker element than the element immediately to its right"

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The banality of the boundary paradox

- Evidence from vowel quality that monomoraic case markers like **e** are grouped with preceding prosodic material

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- Enforced by **prosodic markedness constraints** ranked above syntax-prosody match constraints, e.g., "don't start a prosodic constituent with a weaker element than the element immediately to its right"

- Prosodic units are derived from **spell-out units** rather than syntactic units, e.g. Dobashi (2004, 2009) i.a.

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Remaining puzzle: absolutives induce prosodic phrase edges?

Puzzle: Why should an absolutive argument induce a prosodic boundary?

Problem: we don't see tonal evidence of a prosodic phrase edge before every ergative argument.

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Tonal morphemes inducing prosodic edges?

- $(\text{Verb } \mathbf{H}\text{-})_{PPh} (\ldots$ but $(\text{Verb } \mathbf{e})_{PWd} (\ldots$

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Tonal morphemes inducing prosodic edges?

- $(\text{Verb } \mathbf{H}\text{-})_{PPh} \; (\; \dots$ but $(\text{Verb } \mathbf{e})_{PWd} \; (\; \dots$
  - Drive for contrast preservation of case morphology via an edge tone forces a prosodic boundary

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Tonal morphemes inducing prosodic edges?

- $(\text{Verb } \mathbf{H}\text{-})_{PPh} \; (\; \dots)$ but $(\text{Verb } \mathbf{e})_{PWd} \; (\; \dots)$
  - Drive for contrast preservation of case morphology via an edge tone forces a prosodic boundary

- $(\text{Verb } \mathbf{H})_{PWd} \; (\; \dots)$ but $(\text{Verb } \mathbf{e})_{PWd} \; (\; \dots)$

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Tonal morphemes inducing prosodic edges?

- $\boxed{(\text{Verb } \mathbf{H}\text{-})_{PPh} \ (\ \dots}$ but $\boxed{(\text{Verb } \mathbf{e})_{PWd} \ (\ \dots}$
  - Drive for contrast preservation of case morphology via an edge tone forces a prosodic boundary

- $\boxed{(\text{Verb } \mathbf{H})_{PWd} \ (\ \dots}$ but $\boxed{(\text{Verb } \mathbf{e})_{PWd} \ (\ \dots}$
  - Absolutive high tone appears at edge, but doesn't have status of a prosodic boundary tone

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Conclusions

Samoan has a high boundary tone that marks absolutive case.

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Conclusions

> **Samoan has a high boundary tone that marks absolutive case.**

1. Distribution: a high boundary tone (H-) always precedes absolutive arguments
   - where the absolutive particle *ia* is (il)licit, the H- is present (absent)

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Conclusions

> **Samoan has a high boundary tone that marks absolutive case.**

1. Distribution: a high boundary tone (H-) always precedes absolutive arguments
   - where the absolutive particle *ia* is (il)licit, the H- is present (absent)
2. Grammatical source of tone: inflectional morphology

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Conclusions

> **Samoan has a high boundary tone that marks absolutive case.**

1. Distribution: a high boundary tone (H-) always precedes absolutive arguments
   - where the absolutive particle *ia* is (il)licit, the H- is present (absent)
2. Grammatical source of tone: inflectional morphology
3. Tonal source of tone: tonal reassociation of pitch accent on absolutive particle *ia*

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Implications for Austronesian morphosyntax and ergativity

- H- and *ia* may provide diagnostic for absolute case

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Implications for Austronesian morphosyntax and ergativity

- H- and *ia* may provide diagnostic for absolute case
- Puzzle of acquisition of ergative case-marking when case markers not realized in input: prosodic bootstrapping?

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Implications for intonational phonology and interfaces

- Relations between processes in tonal languages and in intonational systems?

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Implications for intonational phonology and interfaces

- Relations between processes in tonal languages and in intonational systems?
- Reminder that a tone may arise from many sources and that tones may be rampantly homophonous

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Two principles in intonational fieldwork for initial methodological abstraction

1. Avoid confounding influences on variation in fundamental frequency.

2. Control for confounding influences by using **minimal comparisons**.

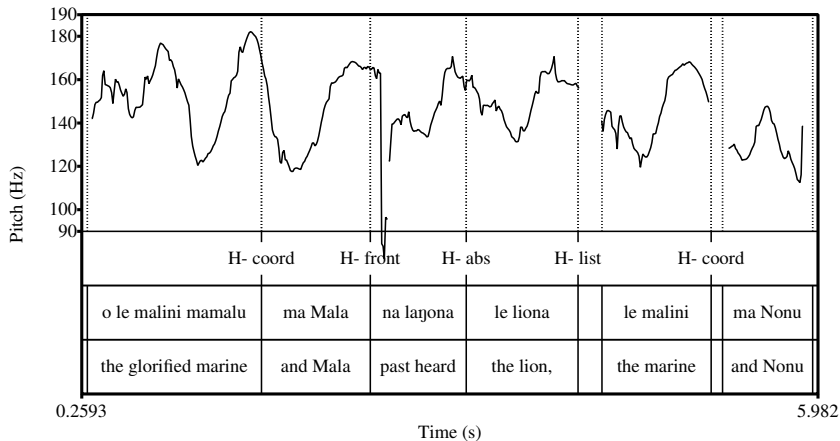   (see also: Yu (2014) on experimental design in fieldwork elicitation)

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Sonorant wordbank

Use sonorants to avoid segmental perturbations of fundamental frequency.

Samoan	Function	Gloss
/na/	tense-aspect marker	PAST
/ma/	conjunction	CONJ
/le/	determiner	DET.SG
/lua/	pronoun (preverbal)	2.DUAL
/ˈŋalo/	verb, abs-obl	to be forgotten by
/iˈloa/	verb, erg-abs	to know
/laˈŋona/	verb, erg-abs	to hear
/laˈlaŋa/	verb, erg-abs	to weave
/maˈnoŋi/	verb, abs-obl	to smell (to)
/moˈmoli/	verb, erg-abs-obl	to deliver, drop off
/ˈMalu/	noun	proper name
/ˈmanu/	noun	bird
/liˈona/	noun	lion
/maˈlala/	noun	charcoal
/maˈlini/	noun	marine

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A multitude of sentence-medial H- tones

(17) ʔo   le   malini mamalu **H-**   ma   Mala **H-**   na
      TOP DET.SG marine glorified **conj** CONJ Mala **front** PAST
      laŋona **H- le   liona**, **H-** le   manini, **H-**   ma
      hear   **abs det.sg lion   list** DET.SG fish   **conj** CONJ
      Nonu.
      Nonu
      'The glorified marine and Mala heard the lion, the fish, and
      Nonu.'

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A multitude of sentence-medial H- tones

	H- coord	H- front	H- abs	H- list	H- coord	
	o le malini mamalu	ma Mala	na laŋona	le liona	le malini	ma Nonu
	the glorified marine	and Mala	past heard	the lion,	the marine	and Nonu

0.2593   5.982

Time (s)

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Distribution of H- in transitive sentences

(18) V**S**O

ʔua   etoeto(-ina) [**e   le   maile**] [**H- (ia)   le   manini**]
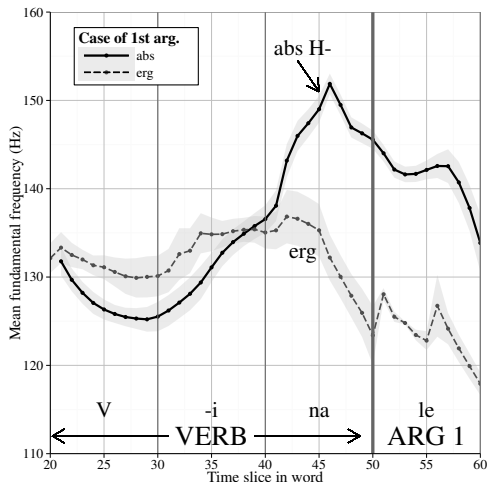PERF lick(-INA)   **erg det.sg dog   abs (abs) det.sg fish**

'The dog has licked the fish.'

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Distribution of H- in transitive sentences

(18)   V**S****O**

ʔua   etoeto(-ina) [**e**   **le**   **maile**] [**H-** (**ia**)   **le**   **manini**]
PERF lick(-INA)   **erg** **det.sg** **dog**   **abs** (**abs**) **det.sg** **fish**

'The dog has licked the fish.'

(19)   V**O****S**

ʔua   etoeto(-ina) [**H-** (**ia**)   **le**   **manini**] [**e**   **le**   **maile**]
PERF lick(-INA)   **abs** (**abs**) **det.sg** **fish**   **erg** **det.sg** **dog**

'The dog has licked the fish.'

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Effect of case of 1st argument: verb + following le

Transitive sentences

- V ★ [e S] [H- (ia) O]

(20) etoet **o-ina**=**e le**
      lick-INA=**erg det.sg**

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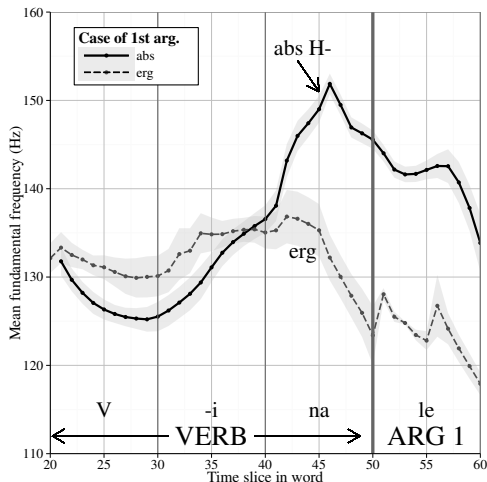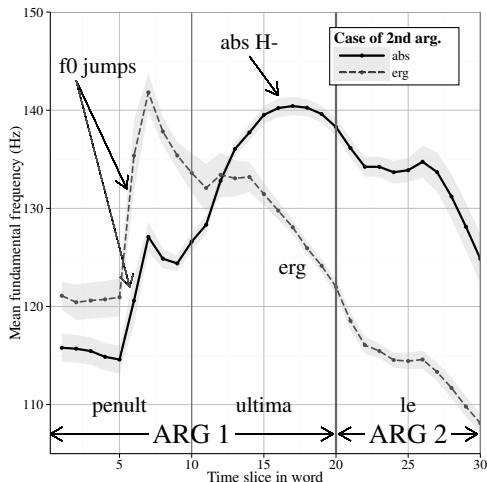

Transitive sentences

- V ★ [e S] [H- (ia) O]
- V ★ [H- (ia) O] [e S]

(20) etoet **o-ina=e le**
      lick-INA=**erg det.sg**

(21) etoet **o-ina H- le**
      lick-INA **abs det.sg**

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Effect of case of 2nd arg: 1st arg + following le

Transitive sentences

- V [**H- (ia) O**] ★ [**e S**]

(22) ma | **nini=e le**
      fish=erg   det.sg

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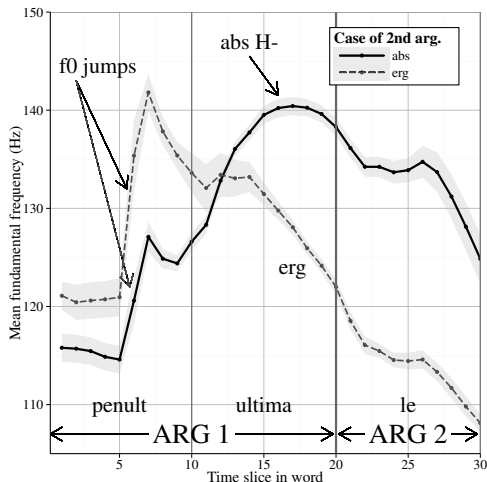
Transitive sentences

- V [**H- (ia) O**] ★ [**e S**]
- V [**e S**] ★ [**H- (ia) O**]

(22) ma **nini=e le**
      fish=erg   det.sg

(23) **maile H- le**
      dog abs   det.sg

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Effect of case of nominalized verb: f0 on subj
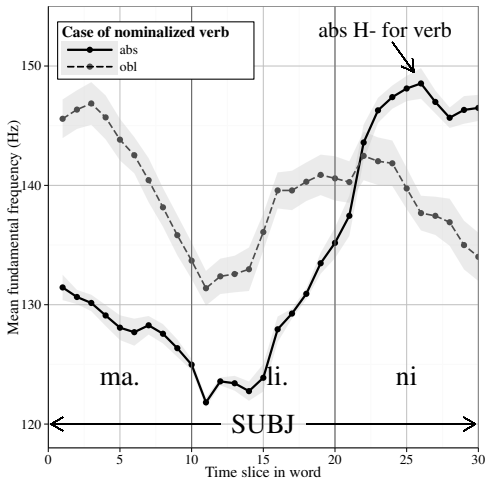
Nominalized verb

- V [**e S**] ★ [**H-** (**ia**) **O**]

(24) e   le |malini| H-
      erg det.sg marine   abs
      [le   momoli-ina]
      det.sg deliver-INA

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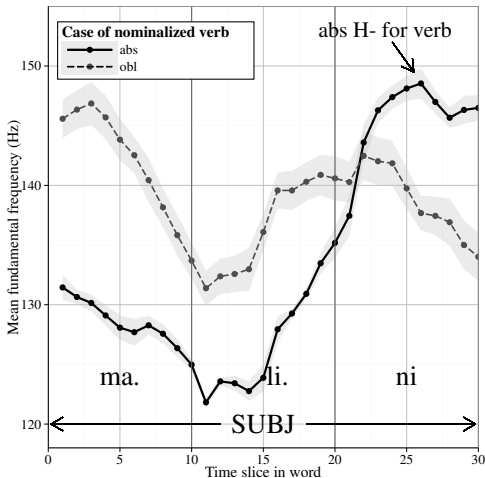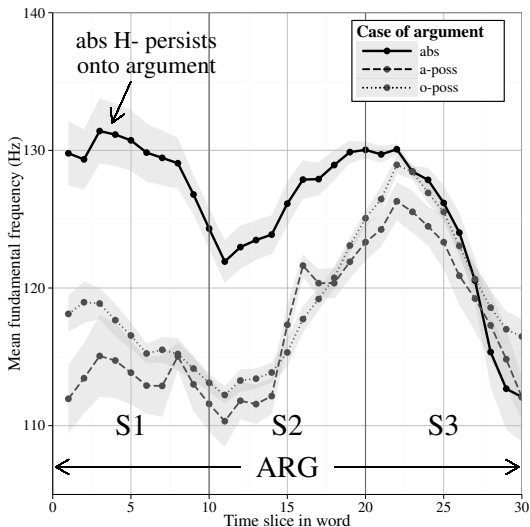

Nominalized verb

- V [e S] ★ [H- (ia) O]
- V [H- (ia) S] ★ ([i DP])

(24) e   le | malini | H-
      erg det.sg marine   abs
      [le   momoli-ina]
      det.sg deliver-INA

(25) H-   le | malini | [i
      abs det.sg marine   obl
      le   momoli-ina]
      det.sg deliver-INA

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Effect of case of arg in nominalization: f0 on arg

Case inside nominalization

- **a**   **malini**
  gen marine

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Effect of case of arg in nominalization: f0 on arg

Case inside nominalization

- **a** | **malini** |
  gen marine

- **o** le | **malala** |
  gen DET.SG charcoal

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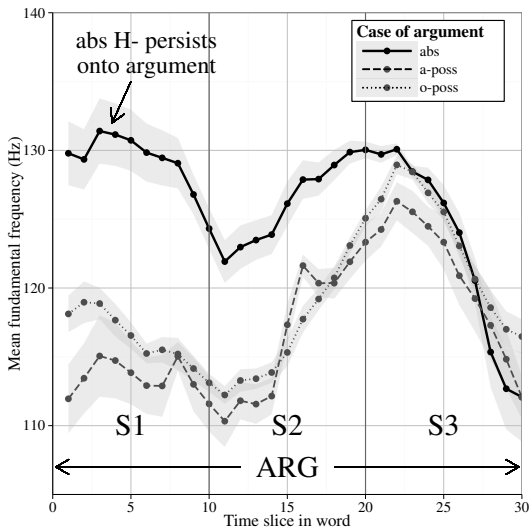
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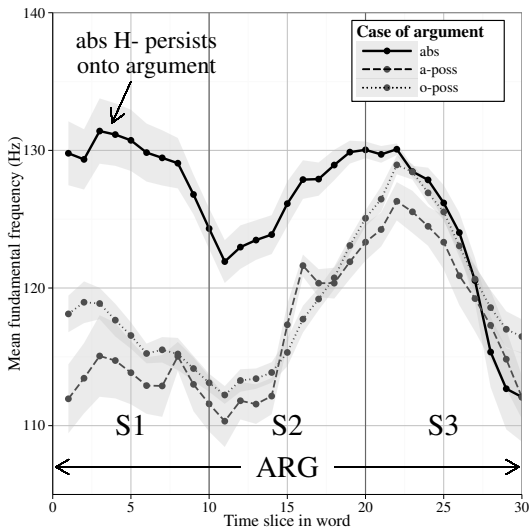
Case inside nominalization

- **a** |**malini**|
  gen marine

- **o** le |**malala**|
  gen DET.SG charcoal

- **H-** le |**manini**|
  abs DET.SG fish

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A phonological source?

Claim: Phrase edge before absolutive must come from some fact about the prosodic placement of an absolutive argument.

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Accentual phrases in Bengali intonation

Figure: Bangladeshi Bengali example from Khan (2008) ▷

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Against phonology as a source

- Tones placed in the phonological grammar are sensitive to prosodic factors like prosodic length and speech rate (e.g. Fougeron and Jun (1998), Jun (2003))

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Against phonology as a source

- Tones placed in the phonological grammar are sensitive to prosodic factors like prosodic length and speech rate (e.g. Fougeron and Jun (1998), Jun (2003))

- But Samoan abs H- always present regardless of linear position of absolutive or size/length of the phonological material preceding it

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Against phonology as a source

- Tones placed in the phonological grammar are sensitive to prosodic factors like prosodic length and speech rate (e.g. Fougeron and Jun (1998), Jun (2003))
- But Samoan abs H- always present regardless of linear position of absolutive or size/length of the phonological material preceding it
- H-'s in Samoan do occur due to **prosodic phrasing choices** of speaker
  1. Sensitive to speech rate and prosodic length

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Against phonology as a source

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  1. Sensitive to speech rate and prosodic length
  2. Subject to prosodic phrasing choices of speaker

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Against phonology as a source

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- But Samoan abs H- always present regardless of linear position of absolutive or size/length of the phonological material preceding it
- H-'s in Samoan do occur due to **prosodic phrasing choices** of speaker
    1. Sensitive to speech rate and prosodic length
    2. Subject to prosodic phrasing choices of speaker
    3. *ia* not licit before H-

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A syntactic source?

Claim: Prosodic phrase edge before absolutives coincides with a syntactic constituent edge of some kind.

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Against syntax as a source

- **H- does not target fixed syntactic position**
  - Insensitivity to word order variation in ditransitives

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Against syntax as a source

- **H- does not target fixed syntactic position**
  - Insensitivity to word order variation in ditransitives
- **H- does not appear before implicit absolutives**:
  - Extraction of absolutives out of relative clauses: no H- (or *ia*) "left behind" in downstairs clause
  - *pro* drop of absolutives

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Word order variation in ditransitives

(26) na   momoli **e   le   liona H- (ia)   le   mumua i**
      PAST deliver **erg det.sg lion   abs (abs) det.sg dolphin obl**

      le   toloa.
      det.sg duck

      'The lion delivered the dolphin to the duck.'

abs ____ ____	____ **abs** ____	____ ____ **abs**
t**H- abs e erg i obl**	**e erg H- abs i obl**	**i obl e erg H- abs**
H- abs i obl e erg	**i obl H- abs e erg**	**e erg i obl H- abs**

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Word order variation in ditransitives

(26) na momoli **e le liona** H- **(ia) le mumua i**
     PAST deliver **erg det.sg lion** abs **(abs) det.sg dolphin obl**

   le toloa.
   det.sg duck

   'The lion delivered the dolphin to the duck.'

abs ____ ____	____ **abs** ____	____ ____ **abs**
t**H- abs e erg i obl**	**e erg** H- **abs i obl**	**i obl e erg** H- **abs**
H- abs i obl e erg	**i obl** H- **abs e erg**	**e erg i obl** H- **abs**

An H- appears before the absolute, regardless of argument order.
⇒ the absolutive H- doesn't target a fixed syntactic position.

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An H- with a syntactic source?

(27) **VSO** ▷

na   lalaŋa **e   le   malini H- (ia)   le   mamanu**.
PAST weave **erg det.sg marine abs (abs) det.sg design**

'The marine wove the design.'

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An H- with a syntactic source?

(27) **VSO** ▷

na lalaŋa **e** **le** **malini** **H-** **(ia)** **le** **mamanu**.
PAST weave **erg** **det.sg** **marine** **abs** **(abs)** **det.sg** **design**

'The marine wove the design.'

(28) **SVO** ▷

o ***e**/***ia** le malini **H-** ***ia** na lalaŋa-ina
TOPIC ***erg**/***abs** DET.SG marine **H-** ***IA** PAST weave-INA

H- **(ia)** le mamanu.
abs **(abs)** DET.SG design

'The marine wove the design.'

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A pragmatic source?

Claim: The absolute H- is the expression of something systematic about information structure (informational focus, contrastive focus,...)

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Against pragmatics as a source

- **Insensitivity to word order or informational status**
  - Appears for given absolutive pronouns

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Against pragmatics as a source

- **Insensitivity to word order or informational status**
  - Appears for given absolutive pronouns

- **Insensitivity to focus conditions**:
  - Appears whether context is broad focus ('What happened earlier'), question focus on the agent or direct object, or contrastive focus on the agent or direct object (Calhoun 2015)