Wh-Constructions in Saisiyat

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Abstract

This paper justifies three aspects of *wh*-constructions in (northern) Saisiyat: (a) it is a *wh*-in-situ language, (b) under the Lexical Merger Parameter hypothesis (Tsai 1994, 1999), it resorts to a mixed parameter setting, evidence coming from the formation of indefinite *wh* construals which is established either at the morphological domain through (partial) reduplication, or the clausal domain via unselective binding by a group of clausal operators, and (c) like Chinese, Saisiyat also displays the *how-why* alternation phenomenon, but there exist certain variations due to its own morphological nature.

Keywords: Saisyat, Lexical Merger Parameter, *wh*-construction, indefinite *wh* construal.

1. Introduction

The purpose of this paper is to investigate syntactic patterns of *wh*-interrogatives and *wh*-indefinites in northern Saisiyat, one of the Austronesian languages spoken in Hsinchu, Taiwan.[1] The current population of Saisiyat is estimated to be around five thousand, but only a small number of them are fluent speakers. Due to historical and territorial factors, some older Saisiyat people are also speakers of Atayal (another Austronesian language), Mandarin Chinese, Japanese, or Taiwanese Southern Min.

The first point addressed in this study is the syntactic distribution of *wh*-phrases in *wh*-questions. It has been suggested by the literature that *wh*-words (in *wh*-questions) among western Austronesian languages appear in at least three patterns: clefting, *wh*-in-situ, and adjunct fronting (Guilfoyle, Hung & Travis 1992, Kroeger 1993, Huang et al. 1999, Potsdom 2006, inter alia). What I will show is that on the contrary, Saisiyat appears to be completely *wh*-in-situ, diverging from the general patterns above. Second, the indefinite *wh* construals (henceforth IWCs) in Saisiyat are found to be formed on

two grounds: morphological reduplication and long-distance licensing, based on the previous discussion that *wh*-words behave as syntactic variables in Saisiyat. Finally, I show that the so-called "*how-why* alternation" phenomenon (Tsai 2008) is also attested in this language, manifested particularly by the instrumental *wh*-adverbial *how*, which exhibits strict mapping at the syntax-semantics interface.

2. Saisiyat as a *wh*-in-situ language

According to the data collected from my own fieldwork, there are at least 18 *wh*-words found in northern Saisiyat, many of which contain *'ino'* (see Table 1):

Table 1: *Wh*-words in northern Saisiyat

I. Adverbial Interrogatives		'inay'ino'	'from where'
		'ila'ino'	'to where'
Wh-word	Gloss	**II. Nominal Interrogatives**	
nak'ino'	'how'		
'inoan'	'when (irrealis)'	*Wh*-word	Gloss
ka'inoan	'when (realis)'	hiae'	'who'
powa'	'why (no tense)'	kano'	'what'
'ampowa'	'why (irrealis)'	hayno'	'which'
mampowa'	'why (realis)'	piza'	'how many'
nompowa'	'for what (purpose)'	koza'	'how much'
haw'ino'	'where (far)'	Say'ino'	'person from where'
ray'ino'	'where (near)'	'inak'ino'an	'what kind'

As is mentioned, Saisiyat *wh*-elements stay in-situ in *wh*-questions, be they arguments or adverbial. Various examples are listed in (1)-(6):[2]

(1) Argumental *wh*: *kano'* 'what'
'oebay Sebet<en> noka **kano'**
Oebay hit<PV> GEN **what**
'What was hit by Oebay?'

(2) Argumental *wh*: *hi:ae'* 'who'
'oebay S<om>bet hi **hiae'**

Oebay hit<AV> ACC **who**
'Who did Oebay hit?'

(3) Argumental *wh*: *hayno'* 'which'
niSo 'am ka **hayno'**
GEN.2S want Acc **which**
'Which one do you want?'

(4) Adverbial *wh*: *nak'ino'* 'how'
'oebay **nak'ino'** rima' kilapa:
Oebay **how** go Kilapa:
'How did Oebay go to Kilapa:?'

(5) Adverbial *wh*: *'inoan'* 'when (irrealis)'
ka kawaS **'inoan** 'am kayzaeh
NOM sky **when.IRR** will good
'When will the weather be good?'

(6) Adverbial *wh*: *nompowa'* 'for what (purpose)'
So'o rim'an **nompowa'** rima' kilapa:
NOM.2S tomorrow **for.what** go Kilapa:
'For what do you go to Kilapa: tomorrow?'

Quite obviously, (6)-(11) suggest that all Saisiyat *wh*-words stay in-situ. This does not change when they are inside an embedded clause (7) or a complex NP (8)-(9):

(7) So'o komoSa' waliSan **hayno'** kayzaeh si'ael<en>
NOM.2S think boar **which** good eat<PV>
'Which boar do you think is delicious?'

(8) yao hinoa' s<om>i'ael ka -[$_{NP}$ t<in>alek ni **hiae'** tatimaeh]
NOM.1SG like <AV>eat ACC <PERF>cook GEN **who** vegetable
'What is x, x a person, such that you like to eat the vegetables cooked by x?'

(9) So'o Sarara' -[$_{NP}$ **'inak'ino'an** nineme kayba'en]
NOM.2SG like **what.kind** dye clothes

'What is x, x a kind of dye, such that you like the clothes made with x?'

In this regard, *wh*-words (including both arguments and adverbials) in this language can be treated as polarity items, i.e. (syntactic) variables, which need to be bound by certain proper operators/licensers (see Cheng 1994 for a similar claim for Chinese). In interrogative sentences, such a licenser is the covert Q-operator (as the complementizer) which bears the [+WH] feature. The licensing of the *wh*-variable by the Q-Operator is thus accomplished at the clausal level, as it is in other *wh*-in-situ languages. The relation is schematized in (10):

(10) $[_{CP}$ Q-Op$_x$ $[_{IP}$ …*wh*(x)…]]
binding

3. Indefinite *wh* construals in Saisiyat

Tsai (1994, 1999) advocates a formal typological theory in terms of the Lexical Merger Parameter to account for a "parametrized" *wh*-dependency relation across languages. In this framework, the syntactic domains in which a proper licenser binds its variable can be divided into three levels: clausal, phrasal, and morphological. English, for instance, is argued to have the operator-variable pair at the morphological level, since the indefinite construals of *wh*-elements are spelled out by compound words like *some-how* or *what-ever*, where "*some-*" and "*–ever*" play the operator role. A relatively highly analytic language like Chinese, on the other hand, resorts to long-distance (i.e. clausal) licensing in forming IWCs. In such languages, *wh*-words can be interpreted with indefinite readings in-situ, as long as some proper clausal licenser is present.

In this section, I will show that concerning the IWCs, Saisiyat simultaneously practices these two approaches, namely the English-type strategy, where morphological reduplication plays an important role, and the Chinese-type strategy, where long-distance binding by sentential operators constitutes the licensing of indefinite *wh's*.

3.1 Morphologically licensed IWCs/quantifier formation

Morphological reduplication is a productive phenomenon in Saisiyat, contributing to various syntactic/semantic functions (Yeh 2000). As the examples below will indicate, this morphological-level operation in Saisiyat can turn interrogative *wh*-words into indefinite ones, which in a sense resembles English *what-ever* or *some-what* forms, only

differing in whether they are reduplication or not:

'ila'ino' 'to where' → '*ila'ino'ino'* 'to anywhere'

(11) 'oebay rima' 'ila'ino'~ino' ma' kayzaeh
Oebay go to.anywhere also good
'It is okay for Oebay to go anywhere.'

kano' 'what' → *kanokano'* 'anything/whatever'

(12) hizae' mae'y:aeh kano~kano' si'ael<en>
that person anything eat<PV>
'He is a person who eats anything.'

piza' 'how many' → *pizpiza'* 'few'

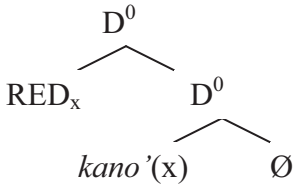
(13) hini' piz~piza' raromaeh
here few bamboo
'There are few bamboos here.'

ray'ino' '(at) where' → *ray'ino'ino'* '(at) anythere'

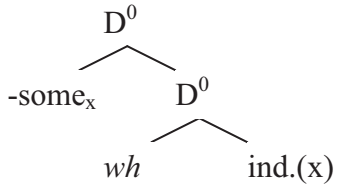
(14) ray'ino'~ino' ma' '<in>aSkan<an> ila
at.anywhere also <PERF>put<LV> ASP
'(It) has been placed anywhere.'

As these examples show, interrogative meanings of *wh*-words are replaced by indefinite readings, more specifically universal quantificational readings. What they imply is that the reduplicated part should be treated as the realization of morphological operators, which license the indefinite readings of the *wh* forms. Such hypothesis can be illustrated in (15a), which is largely in parallel with the structures of *wh-ever* or *some-wh* forms in English proposed in Tsai (1999:45-46), shown in (15b):

(15a) Saisiyat morphological IWCs



(15b) English morphological IWCs



In (15a), *kano'* is the manifestation of a variable, and its (partial) reduplication form,

RED_x (*kano* in this case), functions as the operator/licenser for the indefinite reading, the binding occurring at the D^0 (morphological) domain. Thus, RED_x corresponds to the existential operator -$some_x$, and by the same token *kano'*(x) is the counterpart of *ind*.(x) such as *–at* or *–ere* in English. The only difference between Saisiyat and English, then, is the way their systems of lexicon take to overtly realize the operators: Saisiyat uses reduplication, presumably due to its own syntactic nature, whereas English has certain "specialized" elements (*some-*/*–ever*) for them.

In addition, as Tsai (1994) has noticed, such morphological operator-variable pairs are not created solely for *wh*-words. In English, *al-* can also be regarded as some kind of prefix responsible for the quantificational forces of adverbs like *also*, *almost*, and *already*. This is in fact a natural consequence, if we treat it as another case of (15a) and (15b), i.e. quantifiers in English-type languages should also comply with the same morphological mechanism, at least in this case. This speculation gains support from (13), where the quantity adjective *pizpiza'* originates from the quantity *wh*-word *piza'*. We summarize the discussion in this section in Table 2:

Table 2: Morphological-level IWCs in Saisiyat (FCI = Free Choice Item)

Simple *Wh*-form	(Partial) Reduplication	Ind. Reading	Status
kano' 'what'	*kanokano'* 'anything'	Universal	FCI
'ila'ino' 'to where'	*'ila'ino'ino'* 'to anywhere'	Universal	FCI
ray'ino' 'at where'	*ray'ino'ino'* 'at anywhere'	Universal	FCI
piza' 'how many'	*pizpiza'* 'few'		Quantifier

Note further that since there is no overt licenser for *kanokano'*, '*ila'ino'ino'* and *ray'ino'ino'*, it is more reasonable to treat them as free choice items (which can occur in affirmative sentences) in opposite to polarity items.

In next section, we will see that Saisiyat also implements the licensing of IWCs at the sentential domain, a feature of Chinese-type languages.

3.2 Long-distance licensing of indefinite wh *construals*

To gain a better view, let us take a look at the IWCs in Chinese first. It is widely acknowledged that *wh*-phrases in Chinese can be analyzed as existential polarity items which are licensed in yes-no questions, conditionals, *dou*-quantifications, negations or possibility-indicating expressions (Huang 1982, Li 1992, Cheng 1994, Tsai 1994, Cheng and Huang 1996, Lin 1996, 1998). One well known construction evidencing this feature

in Chinese is the "bare-conditionals" (Cheng and Huang 1996), illustrated in (16a) and its logical representation (16b):

(16) a. shei xian lai, shei xian chi
who first come who first eat
'If X comes first, X eats first.'

b. $\forall_x$ [x is a person & x comes first] (x eats first)

What (16) shows is that both the *wh*-phrases in the antecedent (restriction) clause and consequence (nuclear scope) clause are treated as variables bound by the covert universal necessity operator (∀).

Such variable-like characteristic of *wh*-words is testified in Saisiyat as well. The following sentences (17)-(21) are instances of long-distance binding, where *wh*-phrases receive indefinite readings from their c-commanding operators:

Universal conditional-concessive clauses

(17) a. 'ana **kano'** kita'<en> niSo ma' panabaeh-ani yakin
no.matter **what** see<PF> GEN.2SG also tell-EMP ACC.1SG
'Tell me whatever you see.'

b. 'oebay 'ana rima' **'ila'ino'** ma' kayzaeh
Oebay no.matter go **to.where** also good
'It is fine for Oebay to go anywhere.'

Conditionals

(18) a. So'o So Sarara' **hayno'** kapinao:', payakai' yakin
NOM.2SG if like **which** lady tell ACC.1SG
'If you like any lady, tell me.'

b. So **hiae'** 'okay s<om>i'ael ka pazay, payakai' yakin
if **who** NEG <AV>eat ACC rice tell ACC.1SG
'If there is anyone who doesn't eat rice, tell me.'

Causal sentences

(19) a. sia s<om>i'ael **kano'**, ma'isa:' 'ayaeh
NOM.3SG <AV>eat **what** so ill
'He has (probably) eaten something, so (he) is ill now.'

b. korkoring **nak'ino'**, ma'isa:' h<om>angih ila
child **how** so <AV>laugh ASP

‘Something has happened to the child, so (s/he) is crying.’

Universal donkey sentences (bare conditionals)

(20) a. **hiae’** ‘ima t<om><in>epeS **hiae’** Sebet<en> ma’an
who Rel <AV><PERF>spit **who** hit<PV> GEN.1SG
‘I will hit whoever spits.’ (Lit.: ‘Who spits, I hit who.’)

b. So’o **nak’ino’** <m>ayakay, yao ma’ **nak’ino** <m>atawaw
NOM.2SG **how** <AV>say NOM.1SG also **how** <AV>do
‘I will do whatever you say.’ (Lit.: ‘How you say, how I do.’)

Negation

(21) a. ‘okik ra:m **hiae’** <m>wai:’ rini’ kano’ ketesnenan
NEG know **who** <AV>come here so door
h<in>awaeh
<PERF>open
‘(I) don’t know if someone came here, so that the door is opened.’

b. hini’ ‘okik **piza’** raromaeh
here NEG **how.many** bamboo
‘There are not many bamboos here.’

In (17), the morpheme *‘ana* behaves pretty much like *no matter* in English or *wulun* in Mandarin, occupying a high syntactic position in essence. Although *‘ana* seems to be attached to the *wh*-word in (17b), it can be separated from the *wh*-word by the verb ‘go’ as in (17b), hence a clausal-level operator. The conditional marker *So* in (18) plays the same role in licensing the IWCs. Things are a little bit different in (19), where there is a consequence marker *ma’isa:’* in the consequence clause, which apparently does not c-command the *wh*-words. Expecting the answer by further research, one tentative account at hand is to call for an LF-movement of the consequence clause. After the movement, *ma’isa:’* c-commands and thus properly licenses the *wh*-phrases. An alternative is to regard (19) as involving a covert modal that implements the IWCs. Either way, the *wh*-variables are bound by sentential operators, a typical feature in Chinese-type languages. Furthermore, it is existential readings that are assigned to the *wh*-words. Bare conditionals (20) resemble (16) in permitting the necessity operator (∀) to bind multiple *wh*-phrases. Finally, negation also serves to be the licenser as well in (21), where *wh*-phrases are interpreted as existential.

On empirical ground, Saisiyat IWCs undoubtedly can take place in the clausal domain. That is, clausal operators can license indefinite *wh*-words in this language. I

summarize the above discussion below (see Table 3):

Table 3: Clausal-level IWCs in Saisiyat

Licensing Environment	Indefinite-*wh* Licensor	Ind. Reading
Universal conditional-concessive clauses	*'ana* 'no matter'	Universal
Conditionals	*So* 'if'	Universal
Causal sentences	*ma'isa:'* 'so'	Existential
Bare conditionals	∀ (necessity operator)	Universal
Negation	*'okik* 'not'	Existential

All the indefinite readings of *wh*-words above are licensed by clausal operators including conditional operator, necessity operator, or negation operator. Since these licensers constitute pairs with *wh*-variables neither at a morphological scale nor at a phrasal scale, we conclude that Saisiyat is featured as a Chinese-type language, allowing long-distance licensed *wh*-indefinites.

4. *How-why* alternations in Saisiyat

Tsai (2008) observes that cross-linguistically, two *wh*-adverbials can "alternate" with each other at the syntax-semantics interface. Specifically, the comitative-oriented *how* is taken as a *v*P-modifier, which denotes the instrumental/manner reading. It can also occupy a higher position, scoping over a whole proposition and receives the causal interpretation, functioning as another *wh*-adverbial *why*. Such distinction is revealed in English by *how* and *how come*, as (22) shows:

(22) a. How did John handle this matter? [instrumental/manner]
b. How come John arrived so late? [causal]
(Tsai 2008:84)

The syntax-semantics mapping is more transparent if we consider Chinese. With highly analytic nature, *how* in Chinese has the instrumental/manner reading at a *v*P-peripheral position, but has the causal reading at the CP-periphery, with certain syntactic operators as the "watersheds":

(23) a. tamen **zenme(*-yang)** hui/keyi chuli zhe-jian shi?
they **how(-manner)** will/can handle this-Cl matter

'How come they will handle this matter?'

b. tamen hui/keyi **zenme(-yang)** chuli zhe-jian shi?
they will/can **how(-manner)** handle this-Cl matter
'By what means will/can they handle this matter?'
(Tsai 2008:95)

When *zenme(-yang)* follows the modals *hui/keyi* 'will/can', only the instrumental or manner interpretation is available, and the nominal-like element *–yang* is optional. But if it precedes the modals, only the causal reading is possible, *–yang* prohibited. In what follows, we will see that the *how* in Saisiyat has a very close pattern to this one.

4.1 Three positions & interpretations of how

The interpretations of *how* in Saisiyat are subject to its syntactic positions: when preceding negation or occurring in a sentence without agentivity, we have a causal *how*, which has the similar meaning as *why*, as in (24); after a modal, only the instrumental or manner meaning is conceivable as in (25); and lastly, in the lowest position (after the verb) the *how* is assumed to be an argument (i.e. complement) of the verb, inquiring the result/resultative state of the subject's hunting in (26):

(24) Pre-negation/non-agentive *how*:

a. 'oebay **nak'ino'** 'okay rima' kilapa: [causal]
Oebay **how** NEG go Kilapa:
'How come Oebay did not go to Kilapa:?'

b. hini' pongaeh **nak'ino'** ila minpongaeh ila [causal]
this flower **how** ASP bloom ASP
'How come this flower has come to bloom?'

(25) Post-modal *how*:

rim'an So'o 'am **nak'ino'** rima' kilapa: [instrumental]
tomorrow NOM.2S will **how** go Kilapa:
'How will you go to Kilapa: tomorrow?'

(26) Post-verbal *how*:

niSo 'oemalep **nak'ino'** ila [resultative]
GEN.2SG hunt **how** ASP

'How was your hunting?'

The picture is clear: *nak'ino'* at different syntactic positions refer to corresponding semantic interpretations, in parallel with Chinese. In terms of formal syntax, we maintain that the *how* is a scope-bearing adverbial whose semantic properties vary as it scopes over Mod(al)P or *v*P, and an argument under VP. On the other hand, it contains an invisible nominal source to be bound by the clausal unselective operator so that it can serve as a verbal complement as well as an in-situ comitative *wh*-adverbial (cf. Tsai 1999 for discussions on Chinese counterparts). The summary is given in (27):

(27) The syntax-semantics mapping of *how* in Saisiyat

nak'ino' 'how'	Syntactic position		
	Pre-negation/non-agentive	Postmodal	Postverbal
Semantic interpretation	Causal	Method	Resultative
Grammatical function	Adverbial	Adverbial	Argument

4.2 The characteristics of why

The causal/reason *wh*-adverbial *why* in Saisiyat has at least four morphological variants (see Table 4), one of which I call the "bare form", *powa'*, which generally appears at the sentence-final position as a clausal adverbial, but at a sentence-internal position as a matrix predicate, as (28) shows:

(28) a. So'o rima' kilapa: powa' [clausal adverbial]
NOM.2SG go Kilapa: why
'Why did you go to Kilapa:?'

b. * rim'an So'o powa' rima' kilapa:
tomorrow NOM.2S why go Kilapa:

c. So'o powa' ila [matrix predicate]
NOM.2SG how ASP
'What happened to you?' (Lit. 'How are you?')

Furthermore, the bare form can be attached with the modal *'am* 'will', the progressive marker *mam* (presumably an allophone of *ma* or *mang* provided in Yeh 2000), and the purposive marker *nom*, all of which I call "complex *why*":

Table 4: The family of *why* in Saisiyat

The *why's*	Prefix	Interpretation
powa'	∅	why (not related to tense)
'ampowa'	*'am* 'will'	why (inquiring the cause of an event which has not happened yet)
mampowa'	*mam* (progressive marker)	why (inquiring the cause of an event which has already happened before)
nompowa'	*nom* 'for'	for what (purposive, not related to tense)

The semantic distinctions of the *why* family are subtle, since not all of my informants could distinguish the differences from one another. One informant told me that *'ampowa'* was the most frequently used word when expressing the meaning of *why*, all others of much lower frequency. This is likely to be a result of lexical competition, where one form of *why* (*'ampowa'*) won out, others falling out of use.

Unlike *how*, it is not clear whether these complex *why's* in Saisiyat also respect the same syntactic configuration. As (29) shows, the free distribution of the *why's* does not display semantic distinctions, i.e. they have a freer word order without semantic differences, according to my major informant:

(29) a. So'o rim'an **'ampowa'** rima' kilapa: [sentence-internal]
why.IRR

b. rim'an So'o rima kilapa: **'ampowa'** [sentence-final]
why.IRR

c. **'ampowa'** So'o rim'an rima kilapa: [sentence-initial]
why.IRR

d. So'o rim'an r ima' kilapa: **nompowa'** [sentence-final]
for.what

e. So'o rim'an **nompowa'** rima' kilapa: [sentence-internal]
for.what

f. So'o rim'an **mampowa'** rima' kilapa: [sentence-internal]
why.REA

g. So'o rim'an rima' kilapa: **mampowa'** [sentence-final]
why.REA

If this is true, we then arrive at an asymmetry between *how* and *why*: *how* has a nearly

one-to-one corresponding relation between syntax and semantics, but *why* does not. Although details require further fieldwork and study, a first approximation toward this asymmetry is that the syntactic configuration is reduced to the morphology of *why*, since its variants can be teased apart by overt morphological elements. *How*, on the other hand, lacks the ability to "fuse" with other morphemes, and as a consequence it must reflect various interpretations by way of syntactic leveling. This is reminiscent of the loss of case markers in some Indo-European languages that resulted in the fossilization of word order, and it would be interesting to see if such phenomenon is also visible in other Austronesian languages.

5. Concluding remarks

Through preceding discussions we have seen that as a *wh*-in-situ language, northern Saisiyat happily embraces two approaches to build up its *wh*-dependencies: one is morphological reduplication, the other long-distance licensing/binding. By means of investigating IWCs, we see that morphological reduplication in Saisiyat patterns with *wh-ever* or *some-wh* forms in English which can be analyzed as operator-variable pairs. On the other hand, long-distance licensing is also possible for indefinite *wh's*, which links sentential operators with *wh*-variables at a clausal scale. Finally, I have also discussed the "*how-why* alternation" in Saisiyat, which in a way resembles that of Chinese (cf. Tsai 2008), but at the same time diverging from Chinese in another, i.e. the *how* in Saisiyat behaves pretty much as the *how* in Chinese, while the *why's* in these two languages differ from each other.

One may wonder how the two-way strategy (Chinese- and English-type) in Saisiyat is motivated. As Tsai (1997) has recognized, language evolution and language contact may both result in the change of parameter settings of Universal Grammar. It is therefore not unreasonable to say that the Chinese-type parameter in Saisiyat possibly results from the influence from Mandarin Chinese and/or Hakka, which are typical *wh*-in-situ languages spoken in its nearby territory. In another word, the mixed setting of Lexical Merger Parameter in this case supposedly turns out to be a reflection of language contact which triggered the Chinese-type parameter in Saisiyat. The English-type parameter, realized by the morphological mechanism, should be closer to the more original appearance of this language, under the current speculation.

Within the formal syntactic framework, this study not only contributes to the formal theory of linguistic typology, but also sorting out the language-internal structures

and functions of the *wh*-interrogatives and *wh*-indefinites. Future research on Saisiyat is expected to expand the scope and widen the view in this paper.

Notes

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[2] Abbreviations in the glossary are listed as follows: NOM: nominative case, ACC: accusative case, GEN: genitive case, LV: locative voice, AV: agent voice, PV: patient voice, IV: instrumental voice, PERF: perfect, IRR: irrealis tense, REA: realis tense, 1S: first person singular, 2S: second person singular, 3s: third person singular, ASP: Aspect, EMP: emphatic marker, and NEG: negation.

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