Complete Lexicography Proposal, 2018

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1 Introduction

Having written a complete phonetics proposal, I'm writing a complete lexicography proposal. The subject of this essay is the Loglan "word". As we will see, this does not precisely accord with the definition given in NB3, though that is a place to start. In NB3, JCB said that the fundamental hallmark of a word is that one cannot pause in the middle of it (without changing its meaning). In Loglan 1 (1989), however, JCB allows pauses after borrowing djifoa in predicate words, which nonetheless clearly remain words.

It should also in general always be possible to pause before and after a word. Further, our intention (perhaps not perfectly realized) is that when whitespace represents a pause, not forced by phonetics to represent a pause, and omission of the whitespace would form a word, mere whitespace is not permitted: a comma-marked pause will be as a rule required in such a situation.

In earlier material of ours, we have maintained that classes PA and PANOPAUSES (in which we do allow pauses) are word classes. We now think the analysis suggests that the word units in these classes are smaller (though not always monosyllables) so we expect not to list these as exceptions to JCB's criterion in this document. We continue to view explicit pauses between digits or NI1 units in quantifier words as not constituting word breaks, so class NI remains an exception. We introduced the possibility of pausing and resuming in acronyms, which we will present here as an exception; we also, however, now deprecate the use of Loglan 1989 style acronyms in favor of using names.

In the sister language Lojban, it is said that it is possible to pause anywhere in a stream of unit cmapua without affecting meaning, and so that

there are no multisyllable cmapua words. We believe that this is an elegant situation, but also that TLI Loglan definitely has not achieved it. We do have multisyllable cmapua words, and we will give an analysis of these in this document. There are some multisyllable words which *must* be multisyllable words on pain of ambiguities, and there are some which we view as multisyllable words as a matter of style: some unit cmapua seem to us clearly to be affixes in the proper linguistic sense rather than words, and we do not see value added in being allowed to pause before them.

Contents

2 Name Words (and Alien Text)

The description of name words is simple. These are the name words and acronym words of the phonetics section.

Djan is a word of this class. **DaiNaizA** is a word of this class. Words of these classes are followed by pauses.

The use of the 1989 (or earlier) acronym words is now in my mind deprecated (though still supported): I prefer the use of name words proper obtained by suffixing **-n** to the original acronym words in place of these (as for example **DaiNaizAn**), and I have made grammatical arrangements to support this in the case of dimensions.

I regard the name marker words and alien text marker words as words, separate from the names or alien text which follow them. This analysis might be open to debate. A chunk of alien text is not by its nature a Loglan word! The **y** which separates chunks of alien text is I suppose a Loglan word.

I have been more conservative in this implementation of Loglan grammar (built on the phonetics proposal) about how many name markers there are.

la: The article which constructs names. A name marker. It can also appear as an article in descriptions.

hoi: The principal vocative constructor. A name marker. It can also be followed by other grammatical forms. The words of social lubrication are also vocative markers, but are not name markers.

hue: The inverse vocative constructure. A name marker. It can also be followed by other grammatical forms.

ci: A general "verbal hyphen". Because it can be used between items in serial names, it is a name marker.

liu: The word quotation operator. A name marker. The non-Loglan word quotation marker **niu** is not a name marker, and is not likely to be used before name words.

gao: A proposed operator which converts words to letterals. Because it can be used with names, as in **gao Alef**, it is a name marker.

mue: A new name marker: this is used before a name word used as a dimension. **mue** appears as a unit in acronyms of the 1989 form, but in those contexts it is not a word.

Here are the alien text marker words and **y**.

lao: The foreign name constructor.

lie: The strong quotation operator. It should be noted that our grammar for strong quotation is totally different from the 1989 grammar of strong quotation: it is modelled instead on the 1989 grammar of **lao**.

sao: The foreign predicate constructor.

sue: The onomatopoeic predicate constructor: **sue miao** to meow. **sue sss** to hiss, **sue ccc** to shush.

hoi, hue: The vocative and inverse vocative markers can be used as alien text markers. When they are so used, the following alien text must be enclosed in quotes in writing. This avoids the problem of text with errors in it which should fail to parse parsing unintentionally as alien text.

y: A word used to separate blocks in a single item of alien text.

3 Predicate Words

The description of predicate words is straightforward, though it is not quite as simple as "the phonetic predicate words are the predicate words".

To begin with, the phonetic predicate words (including those with internal pauses after stressed borrowing djifoa) are words. To give an account in which units ending with stressed borrowing djifoa were themselves words would be a complication, not a simplification. Such an account would be made easier by our requirement (not stated, or not made clear in the original proposal) that what follows such a pause must itself be a well-formed complex, but this sort of account would add no value to the grammar.

Numerical predicates are pause-free NI cmapua phrases (described below) followed by one of **ra**, **ri**, **ro**. N-**ra** is the predicate of N element sets. N-**ri** represents the predicate "X is the Nth item in series Y". N-**ro** (a 1990's innovation) is used to qualify other predicates: N-**ro preda** means Nth most **preda** (**nero gudbi** is "best", **toro gudbi** is "second best")[1]. These are

[1]Some discussion of the place structure of these predicates is wanted.

genuinely words because pausing in the middle would produce a description of a certain quantity of items described by a different predicate word. **tetora** is the predicate "is a set with thirty two elements"; **te tora** is an indefinite description, "three pairs". In 1989 Loglan, numerical predicates had to be penultimately stressed; we have partially implemented this requirement in our parser (there is some freedom of stress placement in some cases). In any case this is not required to recognize where these words start or end. More information about the structure of these words will be found in the discussion of NI phrases later in this document.

The words

bia: (is part of),

bie: (is a member of (a set)),

cie: (is less than (math)),

cio: (is greater than (math)),

bi: (is defined as)

are all predicates semantically, though they are structure words phonetically. They form a grammatical class BI of "identity predicates" (not a terribly accurate description).

I propose adding to the class BI all the forms obtained by prefixing **nu**, giving converse operators (my parser allows this). These converse forms are words (the grammar does not allow **nu** to be applied to identity predicates as to normal predicates).

The words

he: (interrogative predicate; a sentence with a **he** in it is a question with a predicate answer),

dua: (first free predicate variable),

dui: (second free predicate variable),

bua: (first bound predicate variable),

bui: (second bound predicate variable)

are grammatically ordinary predicates, though phonetically structure words. None of them are really very ordinary predicates!

The acronyms, which were predicates in 1989 Loglan, are treated as names under our proposals (and in fact we suggest phasing them out and using names for their purposes).

4 Structure Word Classes

Most but not all cmapua words are single syllables (one unit cmapua). Many compound forms often written without spaces, such as **lemi**, "my", actually fall apart into two words. But some do not. Of these, some simply **cannot** be so viewed, and some we think do not make sense as compound words. We will discuss all these cases.

4.1 Tight logical connectives: CA roots

There is a series of logical connectives which must be presented first, as words (or affixes) of this class appear as components of elements of many other classes (including some complex logical connectives!)

The root words of class CA are

ca: and/or

ce: and

co: if and only if

cu: whether or not (truth value of the preceding component)

nucu: converse of `cu` (truth value of the following component)

ciha: interrogative quantifier

ze: mixture

CA roots may be prefixed with **no**, indicating negation of the first connected item, or suffixed with **noi**, indicating negation of the second connected item. Such a structure is called a CA core (a CA root optionally decorated with initial and/or following negations).

4.2 Letters, acronyms, and pronouns

A Loglan upper case consonant letter is C**ai**. A Loglan lower case consonant letter is C**ei**. A third series C**eo** is provided for lower case Greek letters. Further series C**aiu** and C**eiu** are provided: **QqWwXx** are **Kaiu, keiu, Vaiu, veiu, Haiu, heiu**. What the other new letters are, who knows?

A Loglan lower case vowel has the form **zi**V, and the upper case form is **zi**V**ma**. The old style forms V**fi** and V**ma** are fully supported in the parser, though we are not fond of them. These include **yma**, **yfi**. The `V`**zi** form for lower case Greek letters is supported. The VCV letterals are multisyllable cmapua words.

The primary use of the letters in Loglan is *not* as names of phonemes but as **pronouns**. As a pronoun, a letter refers back to a recent argument with the same initial letter. There is a convention favoring using capital letters to refer back to proper names and lower case letters for general descriptions.

There is a further class of atomic pronoun words

tao: (that [of situations]),

tio: (this [of situations]),

tua: (???tu ze da. this may be obsolete),

mio: (we (first + third), independently),

miu: (we (first + third) mass),

muo: (we (first + second+third) independently),

muu: (we (first + second + third) mass),

toa: (this [of text]),

toi: (that [of text]),

too: (you, plural, independently),

tou: (you, plural, jointly),

tuo: (you and others independently (2+3)),

tuu: (you and others (2+3) mass),

suo: (self),

hu: (interrogative pronoun),

(ba, be, bo , bu): series of indefinite [quantified] pronouns,

(da, de, di do du): the series of old-style definite pronouns,

mi: (I),

tu: (you),

mu: (we (1+2) mass),

ti: (this),

ta: (that),

mo: (we (1+2) independently)

The anaphora convention for the series **da, de, di, do, du** can be read about in L1. The idea is that these words live on a stack in alphabetical order (those that are not already in use) and the nth description back in the text not already bound to a pronoun will be bound to the nth letter on this stack when needed. It seems rather baroque but very simple cases can surely be used correctly. We note also that the existence of the digit-suffixed forms should make it easier to use this system.

The general class of pronoun words consists of letters or other pronouns, optionally suffixed with **ci** followed by a NI0 unit (usually a digit; see the section below on numerals and quantifiers). It is advisable to pause after a digit suffixed pronoun like **dacine** (because **ci** is a name marker; with a little work in the parser I might be able to ensure that such occurrences of **ci** are not tagged as name markers). The numerically indexed pronouns are multisyllable cmapua words. It is very important to notice that for us a pronoun is a **single letter**, possibly suffixed with a single digit. Multiletter variables lead to horrible ambiguities which do serious grammatical damage. Multiletter pronouns are in fact supported by LIP but there is language in NB3 which suggests that JCB did not intend to have them, and we *strictly forbid multiletter pronouns (repetition deliberate).*

The reason that it is vitally important **not** to allow multiletter pronouns is that the use of a sequence of individual letters as a sequence of pronoun

arguments without the inconvenience of having to pause after each one is grammatically far more important than any use of sequences of letters as single pronouns or acronyms.

Further letter words, which may be used as pronouns, but to which we may not attach numerical suffixes, are generated by **gao** followed by a single well-formed word, either a name, a predicate, or a consonant initial unit cmapua (CVV or CV). This is a proposal of John Cowan, intended to provide names for letters in alien alphabets.

4.2.1 Remarks on acronyms

An acronym is a sequence of letter names (possibly abbreviated in the case of vowels to zV – not to just V as in older versions of the language – which eliminates distinctions of case of course; corrections of V to zV in acronyms may be required in old texts), and number names (atomic quantifier words or numeral units), beginning either with the acronym marker **mue** [a proposed feature] or a letter (possibly abbreviated) and having more than one component (the dummy **mue** allows the formation of one letter acronyms and also of numeral initial acronyms without confusion with numerals or letterals). Acronyms are used to form dimensioned numbers (as discussed below) and to form acronymic names (no longer acronymic predicates – a proposal of course). The initial marker **mue** ensures that dimensioned number acronyms are not confused with sequences of pronouns, and the fact that acronymic names are **names** ensures that they are head marked in a way which ensures that they cannot be confused with sequences of letter pronouns. Acronyms must always be marked with **ci** when used as components of serial names or name-final descriptions. A pause, terminal punctuation, or end of text is required after an acronym (so it can never attempt to consume a following letteral pronoun). One can pause inside an acronym and resume if the pause is immediately followed by **mue**; this corrects for problems of resolution of sequences of letterals, especially where the VCV forms are involved.

We add as a footnote a remark on why we do not like the VCV letterals. When VCV letterals are used in acronyms, as in **la daiafi**, the analysis of this into phonetic cmapua units has to be **daia-fi**, not coordinated with the semantic analysis into **dai-afi**. I did take the trouble to make sure that though one must pause before VCV letterals where they appear as words rather than acronym components, one does not need to explicitly comma pause; they are treated in the same way as vowel-initial predicates.

We currently propose that the use of acronyms be replaced by the use of actual name words, formed by appending **-n** to the legacy acronyms, and we have made grammatical arrangements to support this usage

4.3 Numerals and quantifiers

The numerals in Loglan are

ni: (0),

ne: (1),

to: (2),

te: (3),

fo: (4),

fe: (5),

so: (6),

se: (7),

vo: (8),

ve: (9).

Other words of the atomic quantifier word class NI0 are

kua: (division)

gie: (left bracket),

giu: (right bracket),

hie: (left parenthesis),

hiu: (right parenthesis),

kue: (inverse division),

nea: (unary minus sign) ,

nio: (subtraction),

pea: (unary plus sign),

pio: (addition),

suu: (root),

sua: (exponent),

tia: (times),

zoo: (double prime),

zoa: (prime),

pi: (decimal point),

re: (more than half of (quantifier)),

ru: (enough of (quantifier)),

hi: (close comma),

ho: (interrogative quantifier)

The closely related RA class contains

ra: (all),

ri: (few),

ro: (many);

these words are distinct because they have a different meaning when they appear as a suffix to a quantifier word (a quantifier word with a suffix with the phonetic shape of a RA word is a numerical predicate, for which see below).[2]

The SA class of quantifier prefixes consists of

[2]This dual use of the RA words has been corrected in Lojban, but we believe we are stuck with it: it is just one of the peculiar charms of the original Loglan. It seems possible to us that it might be wise to put **re** and **ru** in this class as well.

sa: (about/approximately (prefix to a quantifier, by itself **sara**),

si: (at most, prefix to a quantifier, by itself **sine**),

su: (some/any/at least (quantifier prefix) by itself **sune**),

sinoi: (more than; a prefix to a quantifier, by itself **sinoine**???; new proposal),

sunoi: (less than; a prefix to a quantifier, by itself **sunoira**???; new proposal)

sanoi: supported by the grammar, and its meaning is deducible, but seems not likely to be used.

The SA-**noi** forms are multisyllable words or units in multisyllable words: all uses of **-noi** are as affixes.

We moved **ie** (who/what/which?) to class SA and eliminated all special references to it as a class. Note that it could attach to somewhat higher level argument classes in the old grammar, but it can still attach to them in the form **ie me** under the new arrangements. In fact, any word in class SA other than **ie** itself can be prefixed with **ie** to give a new element of class SA (this was needed to support **iesu**, which appears in Notebook 3). Further, **ie** may be succeeded by a pause in all cases; phonetics officially forbids a "word" in the proper sense which contains VV units and other sorts of unit cmapua.

We give semantics for these words briefly, but we do not envisage incorporating any official grammar of mathematical expressions into TLI Loglan; such a grammar might be desired by a group of users of the language, and they can develop their own for local use.

We handle the items **ma** and **moa** (00 and 000) differently than in earlier descriptions of the language. We define a class NI1 of numeral units consisting of a numeral (any word of class NI0 but this really makes sense only for the digits[3] followed optionally by **ma** then optionally by **moa**, and a digit may optionally follow **moa**. D **ma** means D followed by two zeroes; D **moa** means D followed by three zeroes. D (**ma**) **moa** n means D followed by (2+) 3n zeroes. Originally, **ma** and **mo** were words of class NI0 meaning 00 and 000. `mo` is overused for other purposes, so we changed it to **moa**, and the

[3]You live and learn: in the Visit I found a need for forms like **rimoa**, a few thousand, so there is also a class RA1.

use of an exponent seems better than repeating it. Replacing **mo** with **moa** is occasionally necessary in old texts.

A quantifier core (class NI2) is a sequence linked by CA cores of items of the following kinds (the items linked may further optionally be suffixed with **noi**):

SA: A SA word.

numeral block: A sequence of one or more NI1 words, with internal whitespace or explicit pauses permitted. It may optionally be preceded by a SA word.

RA: A RA1 word, which may optionally be prefixed by a SA word (this last option is a change from 1989 Loglan). A RA1 unit is a RA word suffixed with **mo** and/or **moa** optionally followed by a numeral, to give forms with meanings like "several hundred". Question: how do we say "several dozen"? Or do we? It is important to note here that **sara**, for example, is not a numerical predicate, but a quantifier; the 1989 Loglan predicate **sara** becomes **sarara**. Replacements of things like **sara**, **sira** with (resp.) **sarara**, **sinera** is an occasional correction needed in old texts.

A general quantifier word has a quite complex definition. It begins with a quantifier core as described above. This may optionally be followed by an acronym which must start with the marker **mue** [or by the word **mue** followed by a consonant final name word]; if this is present it is the last element in the word and is followed by end of text, terminal punctuation or an explicit pause. There is a final option of appending **cu**. Old Loglan texts will not have the marker **mue** before dimensions; this may need to be inserted.

General quantifier words are regarded as multisyllable cmapua words, even when they contain pauses between NI1 units.

The suffix **cu** (a late proposal of the last Keugru) generates indefinite mass or set descriptors from quantifiers (which are themselves grammatically a species of quantifier). I have to think carefully about whether this construction really describes a set as JCB says or a mass object; JCB, especially in later periods, tended to confuse the two.

The acronym suffixes create dimensioned numbers. The initial marker **mue** is a proposal of ours.

Quantifiers have important grammatical uses in the language, to be revealed below. This is quite a separate issue from having a complex internal grammar of quantifiers/numerals, which we avoid[4]. The word "mex" (abbreviating "mathematical expression") is used in the grammar section for quantifier words.

4.4 Tense/location/relation operators

The root words of this class (which we call PA words (or phrases) for short) are

gia: (time free continuous tense, -ing),

gua: (timeless habitual tense),

pia: (past continuous tense, until [before terms]),

pua: (was habitually -ing, continuous past tense),

nia: (continuous present tense, during [before terms]),

nua: (am now habitually -ing, continuous present tense),

biu: (possibly, under conditions X [before terms]),

fea : ...happens in the same possible world(s) as...(actuality, in the sense of Kripke models of possible worlds). Not necessarily an official part of Loglan.

fia: (will be -ing future continuous tense, since X [before terms]),

fua: (will habitually be -ing, future continuous tense),

via: (throughout a place of medium size),

vii: (throughout a small place),

viu: (throughout a large place),

[4] 2/3/2018 I am considering some simple grammar of quantifier cores. Not implemented, I am just thinking about it.

ciu: (X ga Y ciu Z means Z ga Y as much as X ga Y) [left here for the moment but actually moved to class KOU in 3/9 fix],

coi: (according to rule X),

dau: (probably, likely under conditions X),

dii: (for, on behalf of X),

duo: (by method X),

foi: (X foi Y, X must Y, X ga Y foi Z, X must Y under conditions Z – Y a predicate),

fui : (should, same structure as foi),

gau: (can (same structure as foi?)),

hea: (by, with the help of, X),

kau: (can, is able to (structure of foi)),

kii: (with/accompanied by X),

kui: ...is accessible from...(in the abstract sense of Kripke models, possible worlds). Not necessarily an accepted part of Loglan. I am now quite in favor of using this to build null prepositional phrases in order to force an indefinite variable such as **ba** to have a larger scope, as in **Mi djano lezo ba mormao la Djan, guo kui raba**, "I know who killed John", which literally means "I know for each x to what extent x killed John"; without the **kui ba** it would just mean "I know the extent to which it is true that someone killed John".

lia: (like, in the way that – I suggest that X ga Y lia Z means that X ga Z as Y ga Z, but X ga Y lia lepo Z ga W means X ga Y as Z ga W),

lui : (for, in order to please X),

mia: (subjective subjunctive, mia lepo X = were X the case),

mou: (more than, structure of ciu) [left here for the moment but actually moved to class KOU in 3/9 fix],

nui: (may/is permitted to, structure of foi),

peu: (as for/concerning X), roi (X roi Y = X intends to Y; X ga Y roi Z = X intends to Y under conditions Z),

rui : ...obligates/makes it necessary that... from a counterfactual proposal. Not in the dictionary; not necessarily an accepted part of Loglan.

sea : (instead of X),

sio: (certainly, certain under conditions X [before terms]),

tie: (with/through/by means of instrument X),

va: (in the middle distance, near X),

vi: (here, at X),

vu: (far away, far from X),

na: (now, present tense, at the same time as X),

pa : (past tense, before X),

fa: (future tense, after X)

pau: (ago): added 11/14/2015 to support its use in A First Visit to Loglandia. I am not convinced that we need this cmapua.

and the related small class of KOU roots

kou: (because (cause) of X),

moi: (because/in order to (motive) of X),

rau: (because (reason) of X),

soa: (because(logical premise) of X)

ciu: (X ga Y ciu Z means Z ga Y as much as/to the same degree as X ga Y)

mou: (more than, structure of ciu)

which can be prefixed with **nu**, **no**, or **nuno** to give additional forms which we call KOU cores (a root is also a core). A KOU core is a multisyllable cmapua word.

It is important to notice that **nokou lepo X** does not deny X; in fact, it asserts X and says that the main event happened in spite of X. Forms like **nukou** are converses: they are versions of "therefore X". Forms like **nunokou** are versions of "nevertheless X"; X happens, but not because of the main event, rather in spite of it.

The forms with initial **no** are obligatory words: pausing between the syllables of the word **nokou**, for example can radically change the meaning of a Loglan utterance. **Mi cluva la Meris, nokou Mai bilti** means "I love Mary, but not because she is beautiful". **Mi cluva la Meris, no, kou lepo Mai bilti** has the same meaning as **No, mi cluva la Meris, kou lepo Mai bilti**, "It is not the case that I love Mary because she is beautiful": it is possible that I am not saying that I love Mary at all. In the second sentence, use of an explicit comma to indicate this unexpected usage is required. **Mi cluva la Meris, no kou lepo Mai bilti** will not parse.

The words **ciu** and **mou** were moved into class KOU, to support formation of negative and/or converse forms of these words which are described in Paradigm K on our web site, though they never seem to have been implemented in LIP. The new "causal connectives" **mouki** and **ciuki** (and relatives) created by this move may have uses (I like them very much!).

We propose (with implementation) that PA roots other than KOU roots may be converted with initial **nu-** and/or negated with final **-noi**: these forms enter into all subsequent constructions as PA units (these may be called PA cores). These forms may further be prefixed with non-logically connected NI words (also producing PA cores). The new forms are multisyllable cmapua words (except that pauses are permitted between digits in the optional initial NI segment): this is a case where pauses would not be harmful but it does not seem to me that the **nu** or **noi** are functioning as freestanding words: they are affixes in the proper sense of that word. The conversion and negation forms for KOU roots remain as before (and KOU cores may be further prefixed with non-logically connected NI to obtain more KOU cores). Replacing **nokou** with **kounoi** is probably a good idea, but this would involve extensive changes in existing text. A PA or KOU core may be further decorated with a qualifier of class ZI (**za**, **zi**, **zu**), still obtaining a PA or KOU core (to see the effects of these qualifiers on tense and location operators, see the dictionary).

The class PA of phrases used as tenses or standalone modifiers consists of strings of PA or KOU cores (which may or may not be separated by pauses), such strings possibly linked with CA cores to further such strings.

The class PANOPAUSES used in modifiers with an attached argument consists of PA or KOU **words** (strings of PA/KOU cores not separated by pauses) possibly linked with CA cores to further such words.

Strings of PA/KOU cores not separated by pauses are viewed as multi-syllable cmapua words.

When a PA class phrase is followed by a PANOPAUSES class phrase, an explicitly marked comma pause must intervene.

We think that the intent of **Mi smarue pa, vi le kruma** and **Mi smarue pavi le kruma** is different. The pause in the first sentence must be explicitly marked.

If it is not desired to draw the distinction between PA and PANOPAUSES, the grammatical solution would be to require that a PA phrase used as a modifier must be closed with `gu` when followed by another modifier. In this case, the form of PA and PANOPAUSES phrases would be that given for PA phrases above, and each PA/KOU core would be a (possibly multisyllable) cmapua word.

The semantics of complex PA words will require a considerable essay, to be inserted here in due course. In particular, a summary of the location and tense words and their interaction with **-zV** suffixes is needed, since these have some ad hoc features. **pazu** a long time ago versus **panazu** in the past for a long time interval is an example I insert to remind myself.

These phrases can be used as prepositions (followed by an argument) or as tenses in the broadest sense (followed by a predicate): note the difference in phonetic form between these two uses, indicated above. The word `ga` is a content free tense word not usable as a preposition. **ga** has other uses as well. Details of this will be seen in the grammar.

Where a PA word occurs as a suffix to another word form (with attached explicit pause), it is generally illegal for it to be replaced by whitespace followed by a PA word in turn followed by an explicit pause: where a PA suffix is legal, it cannot be replaced by a following PA word without an explicit pause being indicated. **Da na clivi, o na brute** (an example in L1) does not actually parse correctly with LIP because of lexer problems with APA words; an unintended **ona** is read. It parses correctly as written under the current parser. **Da na clivi, o na, brute** fails to parse under the current parser, because the given pause pattern is in danger of creating an

ona. **Da na clivi, o, na, brute** does parse as intended.

4.4.1 The system of tense and location words

Here we will lay out the system of compound tense and location words, indicating difficulties and possibly some suggestions for improvement.

The basic series of tense words is **pa, na, fa**, which mark present, past, future tense when they mark a predicate; **pa X, na X, fa X** mean before X, at the same time as X, after X, respectively.

A second series of tense words **pia, nia, fia** express continuous tenses. **pia preda** means " was preda-ing". **pia X** means "until X". **fia preda** means " will be preda-ing". **fia X** means "since X". **pia preda** means " was preda-ing". **pia X** means "until X". **nia preda** means "is preda-ing". **nia X** means "during X (throughout)".

A third series of tense words **pua, nua, fua** express habitual tenses. Their meanings are similar to those of the previous series, but they refer to events which often or usually happen during an indicated period rather than events which happen continuously during an indicated period.

These words can be compounded. Here are the dictionary meanings of compound tenses.

papa: had (been)... ed, sign of the past perfect tense.

pana: was/were then... ing, sign of the past coincident tense.

pafa: was/were going to..., sign of past progressive tense, english inexact

napa: has/have (been).../a..., sign of the present perfect tense; already

nana: am/are/is now... ing, sign of the present coincident tense.

nafa: is/are going to..., sign of present progressive tense, English inexact.

fapa: will have... (been) ed, sign of the future perfect tense.

fana: shall/will be then... ing, sign of the future coincident tense.

fafa: will-be going to..., describes an action which takes place after the (future) time being recounted.

These words can be qualified with the suffixes **zV**. Here are the dictionary entries.

pazi: just... ed/was just (now a), a modified tense operator; just before..., before event terms.

nazi: at/coincident with..., an instant in time; at the time when, momentary event clauses.

fazi: will immediately (be a)..., modified tense operator; just after, before event terms.

paza: lately/newly/recently... ed, not too long ago, a modified tense operator; shortly before..., before event terms.

naza: during/in..., in some short interval, with terms.

faza: will soon (be)/be about to/just going to..; shortly after, with clauses.

pazu: long before, some event, before clauses.

nazu: during, in some long interval, with terms; while, during some long event.

fazu: will eventually (be a), a modified tense oper.; long after, some event, before terms.

The dictionary definitions are not fully systematic. Notice that **nia** and **nazu** express different meanings of "while, during". I think in spite of some ambiguity about **nazV** forms, that the **zV** operators do something uniform, qualifying the distance of the event from the argument (or the present in the case of tenses). **nazu** doesn't say that the event actually is far from the present, but since it says the event is in a long interval around the present it permits a long distance from the present.

Continuous examples are also listed

piazu: for all that time until now, adverb and before preds; long-before then and until, with clauses.

niaza: while/throughout the short time, clauses.

niazu: while/throughout the long time, clauses.

fiazu: since, for a long time after, with clauses.

The basic series of location operators is **vi, va, vu**, at/near/far from.

The second series of location operators is **vii, via, viu**, throughout a small/medium/large sized place.

Here are the compounds listed in the dictionary.

vivi: around, in the place where, before terms.

viva: out of where, a short way, with clauses.

vivu: out of, for a long way, before terms.

vavi: into where, from nearby, before clauses.

vava: past where, nearby, before clauses.

vavu: away from, from near to far, before terms.

vuvi: into where, from far away, before clauses.

vuva: toward the place where, before clauses.

vuvu: past where, at a distance, before clauses.

Modifications with **zV** affixes:

vizi: right here/at this spot, before preds; at the spot where, with point like events.

vazi: near this spot/the spot where, of point like events, before predicates.

vuzi: far from this spot, before predicates; far from where, spatially limited events.

viza: in this place/small region, before preds; where, before spatially limited events.

vaza: near this place, before predicates; near the place where, of limited events.

vuza: far from this place, before predicates; far from where, of medium sized events.

vizu: in this place/big region, before preds; where, before spatially extensive events.

vazu: near this region, of extensive events, before predicates; near the place where, of extensive events.

vuzu: far from this region, before predicates; far from where, of extensive events.

The difficulty here is that there really isn't a system as such – at least, if there is, it is only implicitly given. It is possible to extrapolate from this, and it is also possible to compare with the sister language Lojban, in which an effort has been made to systematize these issues.

Another point is the status of the qualifiers **zV**. These are affixes, and one of these terminates a PA core, for us. In LIP, these affixes seemed to terminate PA words. Thus we allow **pazicevuzu** and LIP does not.

It is clear that a lot more words are formally possible, both for my grammar and for LIP.

4.5 Connectives

There are numerous parallel classes of logical and causal connective words in Loglan. Here we are only talking about binary logical connectives like English "and"; the word **no** for the unary negation connective is the sole inhabitant of a separate word class of its own.

4.5.1 Logical connectives for sentence components

The basic series of connective roots is **a, e, o, u, nuu, ha**. These are words by themselves, but certain affixes can be attached to them to build a large class of words. One can add the prefix **no** and/or the suffix **noi** to an A root to obtain an A core.

We describe the class A of basic logical connectives. The root taken from **a, e, o, u, nuu, ha** (possibly with prefixed **no** and/or affixed **noi**, i.e., an A core) follows this. A complete PA word (a tense in the broadest sense) with no internal pauses or spaces may follow as a suffix; finally, if and only if a PA component is present, **fi** or a full comma pause must close the word. An A word may not be followed without intervening space by a PA word (with no internal pauses) then whitespace: this is purely a technical device

to detect unclosed APA words in legacy text. It is worth noting that in the NB3 corpus, JCB appeared to be following a rule of closing IKOU words with commas as one would expect here (though not APA words).

All A words are preceded by explicit comma-marked pauses. The phonetic reason for this exists only when the words are vowel-initial, but the rule is enforced for all words of this class.

It should be noted that our treatment of APA words is a new proposal. These words present considerable difficulties in LIP, and have been abandoned entirely in Lojban. We have preserved them so far because they are common in the NB3 corpus and in the Visit to Loglandia, and because the related IKOU words, which present much the same difficulties of termination, are clearly not dispensable without doing some violence to the corpus. I have tried a couple of different solutions: my aims here are to produce a solution which will allow parsing of legacy text with minimum violence (some pauses) and which will impose no unexpected obligations to pause on a speaker who always closes APA words and their relatives with **fi**.

a means "or" (the inclusive and/or). **e** means "and". **o** means "if and only if". `u` means "whether or not". **nuu** is the converse of `u` in the obvious sense. **ha** is the interrogative quantifier; an utterance with `ha` in it is a question which calls for an A word as an answer. Compounds built with **ha** are not excluded by the grammar but certainly would be odd.

Prefixing **no** has the effect of negating the part of the logically connected utterance before the A word. Suffixing **noi** has the effect of negating the part of the logically connected utterance after the A word.

Suffixing a PA word has different semantics depending on whether or not the PA word is a KOU word. X, `efa` Y means X and then Y while X **erau** Y means X because Y, and careful analysis reveals that the first is `fa` X, Y while the second is X, `rau` Y. This is a slip, but we suggest following Lojban and keeping it this way. The alternative would be to have `epa` mean "and then".

We now describe other series of connectives. The ACI and AGE connectives consist of an A connective, with any pause or **fi** after a PA word omitted, followed by **ci**, **ge** respectively. These connectives differ from A in precedence; their uses will be discussed in the grammar proper. They must be preceded by a pause, just as in the case of A connectives.

The CA connectives are another related class (already briefly introduced above). They are not preceded by pauses. The CA root forms are **ca, ce, co, cu, nucu, ciha, ze**. A CA root or a CA root with a prefix **no** and/or

a suffix **noi** is a CA core. The semantics of **ca, ce, co, cu, nucu, ciha** are analogous to those of the A forms (and adding the **no** and/or **noi** has the same effect). **ze** builds composite objects or mixed predicates; its semantics are entirely different.

A CA connective word may take all the forms of an A connective with the A root component replaced by the corresponding CA component. A preceding pause is not required. The word **ze** has uses which a general CA word does not have (it can connect arguments). I am contemplating the formal possibility of **zenoi** and wondering if it might be useful.

The precise extent of the system of logical connective words here is not the same as that supported by LIP, but it is close. The scheme here allows more CA words than LIP does; we will see if they are useful.

4.5.2 Sentence connectives and new utterance markers

The connectives given so far connect arguments and predicates. We now consider connectives which connect sentences.

The word **i** (always preceded by a pause) begins a new utterance, but can often be treated as if it were a high level logical connective meaning roughly **e**. Further words of the same class I can be constructed by appending a PA word as a suffix, which must be closed with **fi** or a comma pause. The same issue exists for semantics of IPA words that is discussed above for APA words. All words of this class are preceded by a phonetically mandated comma-marked pause.

A word of the class ICA consists of I followed by a CA connnective word. This is a logical connective acting between sentences. Because it is vowel-initial, it must be preceded by a comma marked pause.

An I or ICA word cannot be followed by whitespace then a PA word (an explicit pause is needed to separate a sentence initial PA word from the I or ICA word).

There are further forms ICI and IGE constructed from words of class I or ICA by appending **ci** or **ge** (after removing closures on component PA words).

The closure of logical and sentence connectives with **fi** is a new proposal here (I used **gu** earlier, but it creates conflicts, and I have experimented with different pause conventions).

4.5.3 Forethought logical and causal connectives

The root forethought logical connective forms are **ka, ke, ko, ku, nuku, kiha**, each possibly followed by **noi**. The root KOU words are **kou, moi, rau, soa** [**under a proposal also ciu, mou**] (optionally prefixed with **nu**, **no** or **nuno** to give forms which we call KOU cores (roots are cores too)), of which we will have more to say later. The forethought logical connective words of class KA are either one of these root words, or a KOU core, followed by **ki** then possibly **noi**. These forms appear before the first of the two items connected, with **ki** or **kinoi** appearing between the two items. Forethought connectives can connect almost any grammatical structure that can be linked by logical connectives. Note that forethought analogues of APA words are not provided; they did exist in LIP and could easily be restored if wanted.

The force of the causal connectives such as **kouki** X **ki** Y is (for example) X and Y (because of X). **nokouki** X **ki** Y is (for example) X and Y (not because of (in spite of) X). Note that the initial **no** is not negating X or Y, they are both asserted!

The new connectives **mouki** and **ciuki** have fairly clear meanings: **mouki X ki y**, "X more than Y". **Mi cluva mouki la Meris, ki la Selis**, "I love Mary more than Sally". **Mouki mi cluva tu, ki tu cluva mi**, "It is more the case that I love you than that you love me".

How these words are *used* will be discussed below in the grammar.

4.6 Articles

The basic articles (constructors of definite arguments) are

lea: article for sets: the set of all things with property ...

leu: The particular set I have in mind of things with property...

loe: The typical...

lee: The one or more things I mean which actually are...

laa: The unique object which actually is... (the logical definite description).

le: The default article. The objects(s) understood from context which the hearer will be expected to think have property X...

lo: The mass article (describes composite objects made of all the objects designated).

la: The article for proper names.

These are now all the words of this class. The former construction of complex words of this class by following the root with an optional pronoun followed by an optional PA suffix has been superseded by a modification to the grammar class `descriptn`.

The name constructor **la** appears in the list above but appears in special constructions as well. The precise ways in which names are handled in this grammar involve new proposals.

There is a special class LEFORPO consisting of **le, lo**, and the quantifier cores (NI2) which may appear followed by PO in the formation of abstract descriptions. Notice that no new words are involved. It is worth noting that **lepo** and related forms are not single words, though they are often written without a space, and so can be written **le po** or even **le, po**.

Details of the use of these classes belong in the grammar below.

lau, lua and **lou, lou** are paired forms beginning and ending unordered and ordered lists, respectively.

4.6.1 Constructions involving alien text and related articles (see the appendix to the Phonetics Proposal for some modifications)

In this subsubsection we introduce the articles which handle quotations and imported foreign text, and we also give the full constructions of arguments (and predicates) of this kind. The strong quotation construction that we give is a completely new proposal.

Any well-formed Loglan utterance X can be quoted **li** X **lu**. X may be preceded and followed by explicit pauses (commas) if desired (this is not required). Under the Phonetics Proposal, we have not yet restored quotation of serial names (which are not utterances by themselves, though they are when marked) using **li**/**lu**, though we may do so. **li** is not a name marker word. I am contemplating allowing **li** to quote a descpred followed optionally by a name (this construction may now be the basis of a vocative or inverse vocative) but this seems less likely to be needed. Quotation marks may be inserted after **li** and before **lu** (and must match: if in one place, then also in the other).

A single Loglan word X may be quoted **liu** X. This is the only context in the grammar where the phonetic class of structure words plays any role. In LIP it plays no role even here, as LIP apparently only allows **liu** for actual cmapua. Lojban I believe only allows unit cmapua to be quoted; we admit that there are compound words, so we allow them to be quoted. A **liu** construction must always end with an explicit pause (a new proposal, concurrent with the master Phonetics Proposal). **niu** may be used instead of **liu** to explicitly signal that a quoted word, though phonetically acceptable, is not a Loglan word. The Phonetics Proposal allows **liu** to quote marked names (as **liu la, Djan** or even **liu la, Djan Braon**) and alien text constructions (as **liu sao word**).

One may refer to a letter (rather than use it as a pronoun) using the form **lii** X.

The further forms discussed here operate on alien text. Alien text will be a block of text beginning with whitespace or an explicit pause and ending with whitespace, an explicit pause (comma), or before terminal punctuation or end of text, and containing no commas or terminal punctuation otherwise. It may contain other symbols or non-Loglan letters. Initial and final whitespace must be expressed phonetically as a pause.

The article **lao** followed by one or more blocks of alien text, with blocks being separated by **y** set off with spaces (which must be pronounced as explicit pauses) if there is more than one block, forms a foreign name. Whereever names are to be written by "look" rather than as they are to be read phonetically in Loglan, **lao** should probably be used. This construction was originally presented as a construction for the Linnaean names of biology; it is a valuable observation due to Steve Rice that it has a far more general usefulness. We abandon all other aspects of JCB's discussion of Linnaean names as such: the details of scientific terminology are not part of the purview of the Loglan grammarian.

sao followed by alien text forms a predicate. This is a way to import a foreign word directly. **sue** followed by foreign text intended to transcribe or suggest a sound forms a predicate meaning "makes that sound". **sue miao** is to meow.

Now we present our strong quotation proposal. The basic idea is that a series of blocks of alien text separated by whitespace is quoted by placing **lie** before the first block and **y** before each subsequent block. This is an entirely new proposal, though it turned out to be accidentally similar to the last proposal for the **lao** construction. The original strong quotation method

is not PEG parsable (it is not even BNF parsable) and I think has other weaknesses. I have removed complexities of my original strong quotation proposal and made it parallel to **lao**.

The bit in Alice with the multifariously nested quotation marks must be translated into Loglan using this quotation style!

In the Phonetics Proposal, we have omitted the qualifiers **za** and **zi** for quotation of text versus speech.

We further note that the Phonetics Proposal allows alien text to be enclosed in double quotes, with whitespace allowed to be quoted (but pronounced **, y,**, of course). The Phonetics Proposal *requires* that alien text following **hoi** or **hue** be quoted, to avert the possibility of non-name Loglan text with typos or grammatical errors being read as legal alien text inadvertantly. The Phonetics Proposal allows multiple blocks of alien text to be used after **sao** or **sue**, with or without quotes, as in **sao "ice cream"**, pronounced (and also permitted to be written) as **sao ice y cream**, a predicate meaning (of course) "ice cream".

4.7 Assorted grammatical particles, somewhat classified

Here is a list of terminators and boundary markers: **ci, cui, ga, ge, geu (cue), gi, go, gu, gui, guo, guu, gue**, and also the new **guoa, guoe, guoi, guoo, guou** (or alternatively **guoza, guozi, guozu**). There is a proposal of a new particle **gio**. Variants **guiza**, **guizi**, **guizu** are provided for the alternative parser.

New right closers **guea guua, giuo, meu** have been added.

The particles **je** and **jue** mark tightly bound arguments (or modifiers, according to a proposal).

The JI words

jie: (restrictive set membership),

jae: (nonrestrictive set membership),

pe: (general possessive),

ji: (which/that (is) (identifying),

ja: (which/that (is) nonidentifying

nuji: (new 1/10/2016) converse of **ji**: can be used to set values of pronouns.
La Djan, nuji Daicine sets reference of the pronoun **Daicine** to John.

construct subordinate clauses from arguments, modifiers or predicates.

The JIO words **jio, jao** construct subordinate clauses from sentences (resp. identifying, nonidentifying) Variants of the JI and JIO words suffixed with **za**, **zi**, or **zu** are provided in the alternative parser, matched with alternative closers **guiza, guizi, guizu**. This allows efficient closure (with forethough) of nested subordinate clauses. This feature I will almost certainly add to the official parser.

The case tags, including the positional ones are listed:

beu: (patients/parts),

cau: (quantities/amounts/values),

dio: (destinations/receivers),

foa: (wholes/sets/collectives),

kao: (actors/agents/doers),

jui: (lessers),

neu: (conditions/circumstances/fields),

pou: (products/purposes),

goa: (greaters),

sau: (sources/reasons/causes),

veu: (effects/states/effects/deeds/means/routes),

zua: (first argument),

zue: (second argument),

zui: (third argument),

zuo: (fourth argument),

zuu: (fifth argument),

lae: (lae X = what is referred to by X),

lue: (lue X = something which refers to X)

The operators of indirect reference **lae** and **lue** are a different sort of creature, which originally had the same grammar as case tags, but now have somewhat different behavior. The latter two operators can be iterated (and so can case tags, probably indicating that more than one applies to the same argument).

My opinion of the optional case tag system is that I would never have installed it myself, and it represents an extra layer of work for dictionary maintenance, but it is potentially usable and represents a large amount of work by our predecessors, so my intention is to leave it in place (and try to be good about assigning tags when I define predicates) and maybe maybe some day actually learn the case tags! The whole scheme is quite optional for speakers, though pressure to learn them would be imposed on a hypothetical Loglan community if many speakers actually used them.

The particle **me** constructs predicates from arguments. I believe the addition of **mea** was a mistake, as **me**, properly understood, already served its exact function. I'll write an essay on this eventually. A new closer **meu** has been provided to close **me** predicates (**gu** will still work).

The particles **nu, fu, ju** interchange the 2nd, 3rd, 4th argument of a predicate respectively with the first. These are called conversion operators.

The particles **nuo, fuo, juo** eliminate the 2nd, 3rd, 4th argument place of a predicate respectively, stipulating that it is occupied by the same object that occupies the first argument place (these are reflexives).

More conversion and reflexive words are formed by suffixing a quantifier. The only meaningful ones as far as I can see would be numerals larger than 4 and **ra**, which would choose the last argument place.

Yet more words of this class can be formed by concatenating conversion operators and reflexives; they simply compose, allowing complex reordering and identification of arguments.

Words which form abstraction predicates are the short-scope **poi, pui, zoi** and the long-scope **po, pu, zo**. In each set, the words form predicates for events, properties, and quantities respectively. Additional words **poia, poie, poii, poio, poiu, puia, puie, puii, puio, puiu, zoia, zoie, zoii, zoio, zoiu** are also long scope abstraction operators but with different closure words, **guoa, guoe, guoi, guoo, guou**, the final vowel indicating which closure word is to be used. There is an alternative version of this proposal

adding abstraction words **poza, pozi, pozu, puza, puzi, puzu, zoza, zozi, zozu**, with closure words **guoza, guozi, guozu**; it is thought that **poia** in particular might be confused with **po ia** (though I disagree, insisting that a considerable pause is required in **po ia**) and certainly three additional sets are sufficient.

The uses of all these words will be revealed by the grammar.

4.8 Words which form free modifiers

The register markers indicate attitude toward the person addressed:

die: (dear),

fie: (comrade/brother/sister),

kae: (gentle as in gentle reader to an equal at a certain distance),

nue: (Mr Ms Mrs neutral and at a distance),

rie: (Sir, Madam, Sire, Honorable – to a superior)

They can be negated: there is no reason that we cannot address people nastily in a logical language.

The vocative marker is **hoi**. The inverse vocative marker (indicating the speaker or author) is **hue**.

The "right scare quote" is **jo**, which may be prefixed with a numeral. It indicates that previous text is not to be taken quite literally; the numeral would indicate how many words are in the scope of the **jo**. I notice that if a scare quote were to be applied to a quantity, it would have to be **nejo**. soi crano.

The paired words **kie** and **kiu** serve as spoken parentheses: include a well-formed Loglan utterance between them to form a free modifier. Actual parentheses can now be inserted after **kie** and before **kiu**.

Smilies can be spoken in Loglan: **soi** X, where X is a predicate, forms a free modifier inviting the auditor to imagine the speaker doing X. **soi crano** is literally :-) Loglan smilies are almost as old as the historical origin of smilies, I believe.

The freestanding attitudinal words of the original VV flavor, generally expressing emotions or attitudes, are

ua: (there! thats it! done! satisfaction),

ue: (indeed! oh! surprise),

ui : (fine! good! (pleasure)),

uo: (come now! look here! (annoyance)),

uu: (Alas! Sorry! sadness/sympathy/regret/not apology, that is sie),

oa: (moral obligation – it must be),

oe: (preferably),

oi : (permissibly, you may),

oo: (disapproving hmmm)[to be added!],

ou: (no matter (ethical indifference)),

ia : (yes), agreement),

ii : (maybe (tentative belief)),

io: (I expect that, apparently, moderate belief),

iu: (I have no idea!, ignorance, lack of belief or knowledge),

ea: (let's, I suggest...),

ee: (caution! careful! take care! [to be added]),

ei: (is it true that? forms yes/no questions),

eo: (please? will you? asks permission),

eu: (let us suppose that...(subjunctive)),

aa: (I see (what you mean)),

ae: (yes, I wish to (hope or weak intention)),

ai : (I intend to...Definitely...(strong intention)),

ao: (Yes, I want to, Ill try to...(moderate intention)),

au: (I dont care...indifference, absence of intention)

ie is not really an attitudinal, but an interrogative meaning "which". (the words **aa, ee, oo** are not in the trial.85 list of UI words, though likely the preparser handles them fine in LIP; I have added them).

Additional words with the same grammar are

bea: (for example),

buo: (however, on the contrary, but),

cea: (in other words, namely),

cia : (similarly), coa (in short, briefly),

dou: (given, by hypothesis),

fae : (and vice versa),

fao : (finally, in conclusion),

feu : (in fact, actually),

gea: (again, I repeat),

kuo: (usually, customarily),

kuu: (generally),

rea : (clearly, obviously, of course),

nao: (now, next, new paragraph),

nie : (in detail, looking closely),

pae: (etc., and so forth) ,

piu : (in particular),

saa: (roughly, simplifying),

sui : (also, as well, furthermore),

taa : (in turn, sequence),

toe : (respectively),

voi : (skipping details),

zou: (by the way, incidentally),

ceu: (anyhow),

sii : (evidently)

These words are discourse operators, comments on the way we are speaking.

The word **cao** emphasizes the next word. The grammar will not show this, as it associates attitudinals with the previous word or construction! Notice that one can use the phonetic stress markers to indicate stress in writing.[5]

The word **seu** (a proposal) has a semantic effect, though it is grammatically an attitudinal. It marks an *answer*. This is **significantly useful**[6] for indicating that a predicate word given as an answer to a question is not intended as an imperative; it may have other uses.

Finally, we have words of social lubrication,

loi: (hello),

loa: (goodbye),

sia: (thank you),

siu: (you're welcome, dont mention it),

sie: (sorry (apology))

[5]The word **kia** is listed as having the effect of cancelling the previous word. I do not at the moment intend to implement this: a grammatical implementation would involve recognizing certain **kia**-final constructions as freemods, and there would be decisions to make about what the units cancelled were to be (it appears to me for example that entire quoted constructions would be cancelled, and **liu kia** would be a quoted word, but there would be other restrictions, basically to do with the fact that a cancelled unit could occur only where a freemod could be expected).

[6]serving to compensate for the fact that Loglan, unlike Lojban, does not have an explicit marker for the imperative; we further compensate for this by insisting that tense-marked gasents are observatives, not imperatives.

The word **sie** (to be distinguished from **uu**, sorry in the sense of regret but not apology) is new. Cyril and I believe it reasonable that **siu** be a polite answer to **sie** as well as **sia**.

There is a proposal, currently implemented, that these words also be vocative markers but not name markers, so that one can say **Loa Djan** as well as **Loa hoi Djan**.

The attitudinal, discourse and social words (class UI) can be negated by preceding them with **no** or following them with **noi** (the use of **noi** is a tiny proposal).[7]

In addition, there are discursive operators firstly, secondly, lastly formed by suffixing quantity words with **fi**.

4.9 Negation

The word **no** is the logical negation operator. Initial **no** in attitudinal forms, KOU words, and subordinate clauses (as well as occurrences internal to some compound structure words) must be excluded from this grammatical class. Pauses after **no** may be semantically significant, because they cause word breaks, and also because of the possible use of **no** to negate an entire utterance rather than its first argument (which usually does not affect meaning, though it affects the parse of a sentence).

[7]The ability to write "words" like **noia** (explicitly articulated as **no-ia**, and without a pause before the vowel initial **ia**) requires explicit overrides of the usual phonetic rules; I doubt that **liu noia** will parse, but this can be pronounced without pause.