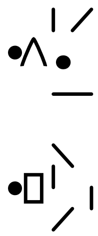
$\mathcal{S}_2$—An Artificial Isolating Human Language



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Contents

Preface

All things mentioned in this document are for private use only. None of the statements made in this document is meant to be true or related to the opinion of the author. It is originally written for the entertainment of the author. To him, writing this document is pure fun. What do other people like? Knitting, sleeping, watching TV, doing sports, or feeding and petting beasts or whatever. As he shares this document with you, it is done for the purpose of your entertainment.

Please note that, because this is only written for the fun of it, you must not get angry about mistakes, typos, etc..

One thing that is especially important to know is that the author is only a part time linguist. So don't get angry about misused linguistic terms or his ridiculous uninformedness. Wrong terms may have resulted from a mistranslation into Latin...

Furthermore, this document is in constant change. The grammar of $\mathcal{S}_2$ is not very stable. Some examples may be wrong, because they follow an old grammar (or not even that...).

Of course, it is always nice to inform the author about flaws or about suggestions you have.

Oh, yes: there are many people to thank. I think these people know that they would have to be mentioned here. But for privacy reasons, I will not reveal their names. But thanks to you!

Henrik Theiling

Chapter 1

Introduction

$\mathcal{S}_2$ is an artificial isolating language with mono- and bisyllabic stems and a totally regular grammar using a fixed word order: agent verb patient (SVO). A summary of features will be given in Section 1.3.

1.1 Goals

Each word stands by itself and cannot be modified in any way by other words or particles that are added. This means that there is neither declension nor conjugation in $\mathcal{S}_2$ nor any other form of stem modification.

$\mathcal{S}_2$ was designed to be as simple as possible and as easy to learn for people no matter what their mother tongue is. Many languages have influenced the author for the design of $\mathcal{S}_2$. This is his second artificial language, which is hoped to be less complicated than his first one, Fukhian[1], although that language was absolutely free of irregularities, too, but in *Fukhian*, there are still too many rules.

Although $\mathcal{S}_2$ is designed to be simple, it is not meant to be a lingua franca for the inhabitants of the earth, but the goal of the design is to have a piece of art, an artificial language, that is elegant by its simplicity and expressiveness. One principle is that imprecise sentences are short and need a lot of context, but can be extended to express every shade the speaker wants to stress. $\mathcal{S}_2$ shall not be linked to any fictious culture, but is designed for humans.

1.1.1 Ancient $\mathcal{S}_2$

The references to a fictious proto-$\mathcal{S}_2$ language, Ancient $\mathcal{S}_2$, should be kept minimal. Only very few words (like numbers) should be constructed with a more primitive language underneath. $\mathcal{S}_2$ is meant to be an elegant language without irregularities from ancient times. It is the starting point for other languages to develop. This is why there shall not be words that are contracted from old words. $\mathcal{S}_2$ also should not have any loan words from other languages.

Currently, this goal is violated by numbers only, which are contracted from older words.

[1] `http://www.theiling.de/projects/fuch/`

1.2 Difficulties

The main language that has influenced $\mathcal{S}_2$ is Mandarin Chinese, which is the most recent language the author has started to study before the creation of $\mathcal{S}_2$. Mandarin grammar made many things in other languages seem superfluous and complicated. Aspects of many languages and the need for a grammar that is free of any irregularities then finally led to $\mathcal{S}_2$.

The following list shows some aspects that seem to be a problem when learning a foreign language. $\mathcal{S}_2$ tries to eliminate (or at least minimise) the problem of all of them.

- Irregularity. For obvious reasons, this is complicated and, therefore, banned from $\mathcal{S}_2$.
- Declension and conjugation. Many languages, e. g. German, Icelandic or Latin, have declension and conjugation classes. I. e. it is unpredictable from the nominative singular form of a noun how the plural oder other cases have to be formed. Instead, the declension class has to be remembered for every noun.

  Derived forms may still be unpredictable when you happen to know the gender (although in German, this often helps). Some examples for plural forms in German: 'der Hals' → 'die Hälse' vs. 'der Rand' → 'die Ränder' vs. 'der Strahl' → 'die Strahlen' vs. 'der Schal' → 'die Schals' vs. 'der Wal' → 'die Wale' vs. 'der Saal' → 'die Säle'.

  Sometimes, the plural form is different for different meanings of a word, e. g., the plural of 'die Bank' (E.: 'the bank') is 'die Banken' but for 'die Bank' (E.: 'the bench'), it is 'die Bänke'.

  Agglutinating languages are more regular, but usually have harmony rules that apply when an affix is added and which can change the stem and/or the affix. Examples are Finnish ('katu' (E.: 'Street') → 'kadulla' (E.: 'on the street')) or Turkish ('ev' (E.: 'house') → 'evler' (E.: 'houses') vs. 'adam' (E.: 'man') → 'adamlar' (E.: 'men')).

  $\mathcal{S}_2$ will, therefore, be an isolating language. (*Fukhian* was an agglutinating language, but was totally regular, without any harmony rules).
- Concord[2]. In most languages, concord between words is part of the grammar, i. e., words in a sentence influence each other. E. g., German articles, adjectives and nouns must agree in case and number. Moreover, they influence each other's mode ('ein guter Beamter', 'der gute Beamte'). $\mathcal{S}_2$ and *Fukhian* do not contain any syntactic concord phenomena.

  In $\mathcal{S}_2$, it was tried to keep out any semantic concord, too, although this is very hard. One thing is a 'default verb': for a 'car' the most natural thing will be to drive it, for 'food' to eat it. When it's clear, the verb may be left out to reduce this kind of concord.
- Complicated saturation rules of verbs. English and German words are complicated with regard of the saturation rules, because the learner has to memorise by which case or preposition the saturation is done (e. g. 'to depend *on*', 'to look *for*', etc.).

  $\mathcal{S}_2$ and *Fukhian* both try to make saturation as simple as possible.
- Articles. In English, you have to learn that 'I go to school' and 'I go to the school' are different things. The use of the article differs from German in many cases: 'I go to school' translates to 'Ich gehe zur Schule' (where 'zur' contains the definite article), but 'I play *the* piano.' translates to 'Ich spiele Klavier.' with no article.

  Because most languages do not have an article (e. g. Russian, Polish, Chinese, Japanese, Korean, Finnish, to name just a few), it was decided that neither $\mathcal{S}_2$ nor *Fukhian* use articles.

  Note that excluding articles does not mean that demonstrative pronouns do not exist.

[2] dt: 'Kongruenz'

- Gender and classes. German and many other language have gender, which is complicated, because the learner needs to remember the Gender with every noun to be able to follow concord rules with articles, adjectives, etc.

  Mandarin and many other languages classify every noun by a unit word to count objects. E. g., cats are counted in another way than dogs. And horses are counted in yet another way. Furthermore, words that happen to be unity words may be counted without another unit word, e. g., cups (Mand.: 'bēi'). This does not seems to be necessary, so both $\mathcal{S}_2$ and *Fukhian* allow counting everything without the help of unit words.

  German gender becomes even trickier nowadays as people try to use more logical gender assignments. E. g., grammatically, 'das Mädchen' (the girl) is neuter. Adjectives and articles in concord will therefore use neuter forms. But modern German tends to still use feminine gender in subsequent sentences that refer to the word: 'sie' is used.

  In $\mathcal{S}_2$, there are neither classes nor gender.

- Number. Although at first sight, from the point of view of European languages, number seems necessary, it actually is not. Mandarin only has very limited support for number (only for subjects of sentences that happen to be people). As far as the author knows, Japanese does not have any number. Obviously, having no number makes a language easier.

  Number also has its problems. English dialects differ in which number 'the couple', 'the crowd', etc. have. Other words like 'the police' is always clearly plural. All of the previous are unmarked for plural, though.

  $\mathcal{S}_2$, therefore, does not have any number (*Fukhian*, however, had)

- Word order. Some languages have a free word order. The relation between the words is marked by grammar in another way, e. g., by endings or additional particles. However, most languages that mark the words' relation still have a standard word order (German, Finnish, Korean, etc.). So it was decided that $\mathcal{S}_2$ will use word order as the main concept of expressing words' relations (*Fukhian* went the other way).

- Word categories. It seems possible that an idealised version of Mandarin could work without the need of distinguishing verbs, nouns, adjectives and so on. This became clear to the author by learning Mandarin. It was decided that the concept of not distinguishing word categories will be the main principle of $\mathcal{S}_2$. How this can work will be explained later. Dropping the distinction makes the creation of complex structures either superfluous or very easy. These include sub-ordinate clauses, participles, adverb constructions, gerunds, word category shifts, etc.

- Tenses and moods. Tenses and moods of verb forms make a language complicated. Learners of English and French will have to learn 'if'-clauses, i. e. which tenses in the matrix clause trigger which tenses in the sub-ordinate clause. Other examples of complex tenses are Continuous verb forms, (learners have to memorise that 'for' and 'since' usually trigger present perfect continuous), perfective aspect (Russian and Mandarin work different here, but both are complicated (especially Russian, because the verb forms are irregular)).

  Many languages show that only very few tenses are sufficient to express everything. All languages the author knows have at least some basic forms of tenses and moods. $\mathcal{S}_2$, however, will be free of complicated tenses and moods. Auxiliary words like 'formerly' or 'in the future' or 'possible' will be available, of course, in order to get the full expressiveness.

- Vocabulary. There are different types of vocabulary: English has many special words that are not composed. English tends to use monosyllabic words. So complex phrases like 'to blow up with a nuclear bomb' were reduced to 'to nuke'. Its vocabulary is hard to learn, because there are very few obvious rules of composition.

In contrast to that, Mandarin has many composite words. Theoretically, this should be easier to learn. But because Mandarin often uses bi-syllabic words, monosyllabic words are often extended to two syllables (e. g. ‘dao’ (knife) is extended to ‘daozi’ (knife) just to be longer) and longer words, resulting from composition, are reduced to fewer syllables (e. g. ‘déyǔ’ (E.: ‘German’) and ‘hànyǔ’ (E.: ‘Mandarin’) are composed to form ‘déhàn’ for a ‘German-Mandarin’ dictionary. Or the word ‘airport’ reduces to ‘jīchǎng’ from ‘fēijī’ (E.: ‘plane’) and ‘chǎng’). Needless to say, the process of extending and reducing words to two syllables follows no general rule. This makes Mandarin vocabulary very complex, too.

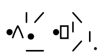
Many languages also use foreign words that have to be learned instead of an easy composition. European languages often borrow words from Latin and Greek: ‘church’ ↔ ‘ecclesiastical’. This even happens if the stem has the same origin. Then one of them may undergo the pronunciation shifts for that language, the other one does not. E. g. in French: ‘église’ (church) ↔ ‘ecclesial’ (ecclisiastical).

Mandarin, because of its semantic writing, does not incorporate foreign words well, e. g., the writing of the word for ‘Sandwich’ (Mand.: ‘sānmíngzhì’) starts with the characters for ‘three’ and for ‘bright’.

In $\mathcal{S}_2$ it was tried to use simple, maximally bi-syllabic stems together with logical composition in order to make vocabulary as easy as possible. The creation of vocabulary, however, is one of the hardest tasks and hopefully the goals can be achieved.

- Sexism. $\mathcal{S}_2$ treats sexes equally. It does not distinguish ‘father’ and ‘mother’, ‘son’ and ‘daughter’, it has no word like ‘postman’ etc. The word for ‘person’ is not derived from ‘man’, neither is it derived from ‘woman’. There are no distinct pronouns for ‘he’ and ‘she’. It does not assume that a ‘teacher’ (dt: ‘Lehrer’) is male by default and, therefore, it has no special suffix to turn it into a female (dt: ‘Lehrer+in’), but instead two words to turn it into either male or female.

  This is in contrast to most natural languages. I chose the design, because underspecification is a principle. It is elegant to be done this way. If you mean a man, add the word ‘man’. If you mean a woman, add ‘woman’ (where ‘woman’, of course, is not derived from ‘man’ in $\mathcal{S}_2$).

All these aspects have led to the structure $\mathcal{S}_2$ now has. It is intended to be as elegant as possible. The word for elegant by being simple and logical in $\mathcal{S}_2$ is ‘tyl’: . That’s way $\mathcal{S}_2$ is called ‘tyl sjok’ .

1.3 Feature Overview

The following is a brief overview of features of $\mathcal{S}_2$.

- no lip movement
- isolating
- SVO (better say Agent Verb Patient: AVP)
- 2 word categories: nouns and particles
- concord free
- active case marking based on control
- 2 (unmarked) cases: agentive and patientive

- fixed word order
- time, aspect, mood unmarked
- no copula
- high context
- embedding structure
- attribute undistinguished from predicate
- dependent-marking
- a priori

- $\mathcal{S}_2$ has no labial consonants and all vowels are unrounded. The lips need not be used for speaking. (see Section 2)
- $\mathcal{S}_2$ is an isolating language. I. e., no lexicon entry ever changes its form when used in a sentence. (The terms lemma and stem make no difference in $\mathcal{S}_2$).
- Word order is SVO (subject verb object), where the terms 'subject' and 'object' are a bit wrong and should be 'agent' and 'patient' instead.
- $\mathcal{S}_2$ has only two categories of words: nouns/verbs and particles. Nouns will often be referred to as verbs or adjectives or whatever. This is because neither term matches the category very well. Maybe 'root' would be a good term. Or maybe 'governors'.
- $\mathcal{S}_2$ has no concord between words in a sentences, i. e., words in a phrase do not influence each other on syntax level.
- $\mathcal{S}_2$ uses *active case marking*. This means that subordinates to a verb are distinguished by whether they are agent or patient. There are other variants: English, German, Mandarin and many others use nominative case marking most of the time. Euskara and others use ergative case marking.

  The agent slot is (usually) assigned when an entity is in control. Other possibilities would be to distinguish events from states.
- Due to the fact that case, thus noun dependency relation, is unmarked morphologically, it is marked syntactically by word order. This involves a fixed word order.
- Sentences are unmarked with respect to time, aspect and mood. Auxiliaries have to be used to express that. (See Section 5.2)
- $\mathcal{S}_2$ has no copula. Instead, the predicate noun is used as a verb and depending. By default, the sub-ordinate is put into the patient slot. For some verbs, the agent slot may also be used. (See Section 5.4)
- All things that are clear from the context may be left out. This not only includes unfilled valence slots, but also aspect, time, mood, and other functions that are grammatical in other languages.
- Embedding structure means that a composite phrase behaves like a single nouns. To attach sub-ordinate clauses, they are simply embedded into the matrix clause. It may be left unmarked which word is used as the reference in the matrix clause (but there is a particle for marking the reference).

- Attributes select sub-sets ('red books') of entities whereas predicates describe entities ('books are red').

  In $\mathcal{S}_2$, the difference is not marked in the clause itself.

  However, the following constraint holds: embedded clauses where the entity is referenced will be analysed as attributes ('I like red cars.'), whereas the others (those that are not embedded or those that have other references) will be analysed as predicates ('I like that cars are red').

- Usually in $\mathcal{S}_2$, neither the head not the dependent in a phrase will be marked. However, the reference particle being a marker for sub-ordinate relations, always marks the dependent, so $\mathcal{S}_2$ is considered dependent marking.

- $\mathcal{S}_2$ is an a priori language, i. e., it is not derived from any other languages. The lexicon is puristic without borrowings from any other languages.

1.4 Natural Language

Throughout this document, phenomena of $\mathcal{S}_2$ may be explained as if it were a non-artificial language. For example, it is assumed that $\mathcal{S}_2$ is spoken somewhere, say in a country, and that one can distinguish dialects by locations in that country.

Another point is that development of the language is assumed to have occurred in the past.

This is not done in order to construct a fictional world where $\mathcal{S}_2$ is spoken, but to have a means of explaining and constructing the language in a more natural way.

Chapter 2

Pronunciation

This section describes how words are pronounced in $\mathcal{S}_2$.

Briefly:

```
Vowels (all unrounded):
      Romanized         X-Sampa
     FRN CTR BCK       FRN CTR BCK
HGH   i   y   u         i   1   M
LMD   e   w   o         E   3   V
LOW       a                 a

Palatized Vowels:
      je, ja, jo, ju, jy, jw

Consonants:
   Romanized/X-Sampa
     ALV  VEL  GLT      Remarks
STP   t    k    ?       usually voiceless, usually unaspirated
FRC   s    x    h       usually voiceless
NAS   n   ng/N
LAT   l

Clusters:
      ts   kx
      nt   ngk

Phonotactics:
     C(j)V(C(C)V)(C)
```

Accidentally, the vowels look very similar to those of Rumanian. The differences are: a) the low-mid vowels are mid and b) the back vowels are rounded in Rumanian. The Rumanian system thus is:

```
      Romanized         X-Sampa
     FRN CTR BCK       FRN CTR BCK
HGH   i  î/â  u         i   1   u
MID   e   ã   o         e   @   o
LOW       a                 a
```

2.1 Basics

The goal of the design of $\mathcal{S}_2$ phonemes is to have a language that does not use the lips to form sounds. Therefore, no labial or labiodental consonants exist and all vowel are unrounded.

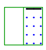
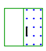
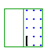
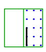
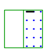
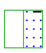
A word in $\mathcal{S}_2$ always starts with a consonant. The syllabic part of a syllable is always a vowel group, either monophthong or diphthong, thus no syllabic consonants exist (e. g. in contrast to colloquial German: ‘einen guten Lappen’ [ʔaɪn̩ ˈɡuːt^{n}n̩ ˈlap^{n}m̩]).

2.2 Consonants

$\mathcal{S}_2$ uses the following consonants. The consonants should be quite easy to pronounce for most speakers as they are common in many languages. German has most of them, most dialects of English have all but the velar fricative.

The sounds where chosen in order to be easy to distinguish even when mumbled and spoken without a lot of effort. $\mathcal{S}_2$ speakers are lazy. So uvular sounds or only used when they are closed to back vowels (not in all dialects), because they are too much effort otherwise.

The same holds for retroflex sounds which where left out, because it is exhausting to flip the tongue back (most speakers of Mandarin are also too lazy to pronounce any of the retroflex fricatives and affricates).

$\mathcal{S}_2$	Roman	IPA	Description
	t	[t]	alveolar voiceless plosive
	s	[s]	alveolar voiceless fricative
	n	[n]	alveolar voiced nasal
	l	[l]	alveolar voiced lateral
	k	[k], [q]	velar (or uvular) voiceless plosive
	x	[x], [χ]	velar (or uvular) voiceless fricative
	N, ng	[ŋ], [ɴ]	velar (or uvular) voiced nasal
	?	[ʔ]	glottal plosive (glottal stop)
	h	[h]	glottal voiceless fricative

All vowels appear palatalised, too. This is reflected by writing ’j’ in the romanisation. A glottal stop followed by a palatalised vowel collapses changes to a palatal glide. The writing shows this by not writing the initial glottal stop in that case.

To clarify the pronunciation, it should be said that you should be lazy when pronouncing sounds of $\mathcal{S}_2$. The [s] is pronounced like in some dialects of Dutch or of Spanish, so it is less tense than in German. All others are pronounced like in French (i. e., not like in German, where voiceless plosives are sometimes postaspirated).

For the usage of uvular sounds see Section 2.10.

The following affricates are pronouncible in $\mathcal{S}_2$ (only between vowel groups):

$\mathcal{S}_2$	Roman	IPA	Description
	ts	[ts]	alveolar voiceless affricate
	kx	[kx], [qχ]	velar voiceless affricate

The following nasal-plosives are pronouncible in $\mathcal{S}_2$ (only between vowel groups):

$\mathcal{S}_2$	Roman	IPA	Description
	nt	[nt]	alveolar nasal-plosive
	Nk, ngk	[ŋk], [ɴq]	velar nasal-plosive

2.3 Vowels

The following vowels exist in $\mathcal{S}_2$. They were chosen to get a set of easy to pronounce vowels that are distinguishable easily (they are separated far enough from each other), to keep the lips out of duty and to keep movement of the jaw as small as possible. It should be possible to generate the vowels with the use of the tongue alone without moving the lips or the jaw.

$\mathcal{S}_2$	Roman	IPA	Kirshenbaum	X-Sampa	Description
	i	[i]	i	i	unrounded close front vowel
	y	[ɨ]	i"	1	unrounded close centre vowel
	u	[ɯ]	u-	M	unrounded close back vowel
	e	[ɛ]	E	E	unrounded open-mid front vowel
	w	[ɜ]	V"	3	unrounded open-mid centre vowel
	o	[ʌ]	V	V	unrounded open-mid back vowel
	a	[a]	a	a	unrounded open centre vowel

[i], [ɛ] and [a] occur in German: 'bieten' [ˈbiːt^{n}n̩], 'bäten' [ˈbɛːt^{n}n̩], and 'baten' [ˈbaːt^{n}n̩]

[ɯ] sounds like 'u' in German 'Ruf' [ʀuːf], but with unrounded lips. (Like Korean 'eu' in 'Hangeul' [haŋgɯl] and Japanese 'u' in 'Sushi'.)

[ʌ] occurs in English 'but' [bʌt].

[ɜ] sounds like 'e' in German 'Blume' [ˈbluːmə], but is a bit more open. In some non-rhotic dialects of English in 'first' [fɜ:st].

[ɨ] sounds like 'i' in German 'blind' [blɪnt] but father back. In Russian this sound exists (transcribed as 'y'). It is usually diphthonguised in Russian but is a clear monophthong in $\mathcal{S}_2$. In Turkish, dot-less i has this pronunciation: 'ı'.

Note that the vowels are pronounced only by movement of the tongue. The ideal position is having your mouth almost closed, with the teeth at a distance of 1 to 5 millimetres. The sounds then may shift away a bit from the descriptions given above.

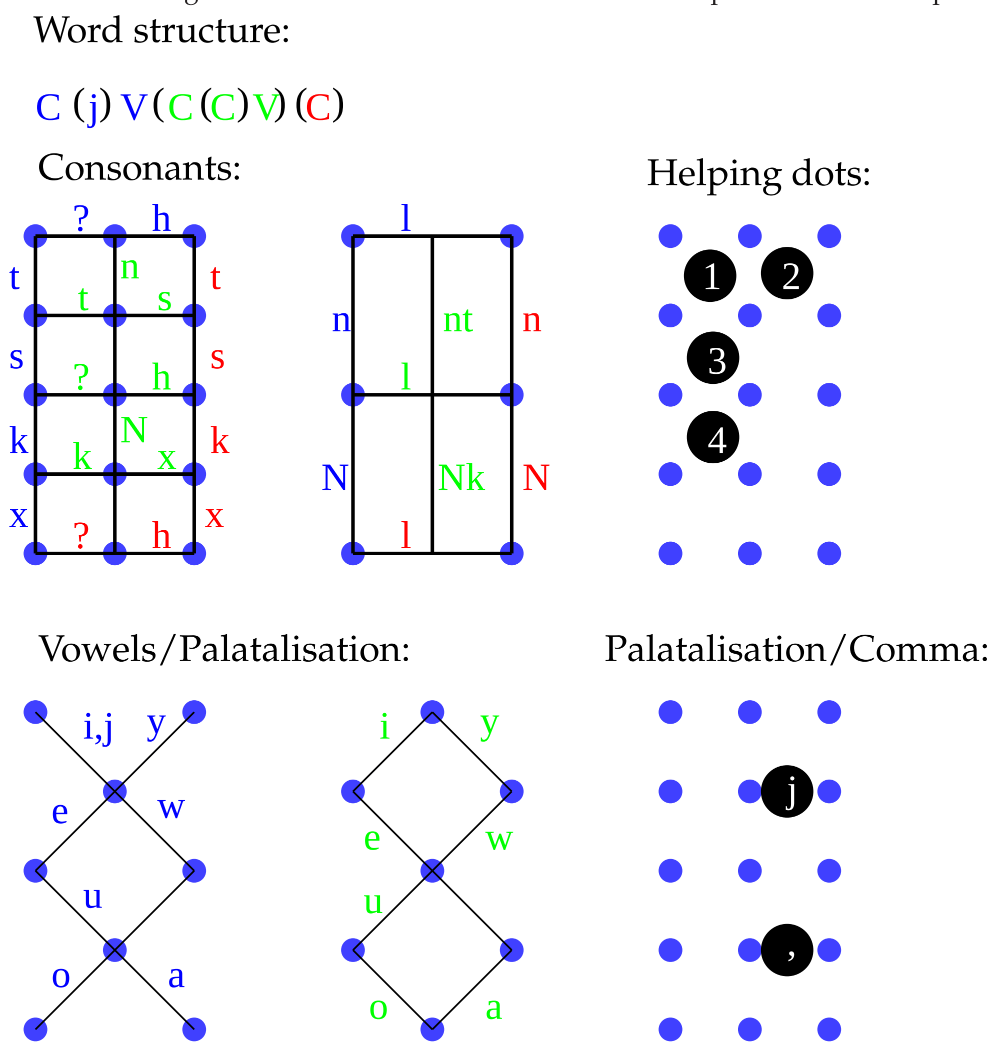
All vowels are short (but lengthened a bit by a stress).

The following palatised vowels are pronouncible in $\mathcal{S}_2$, which often influence the preceding consonant strongly:

$\mathcal{S}_2$	Roman	IPA
	je	[jɛ]
	ja	[ja]
	jo	[jʌ]
	ju	[jɯ]
	jy	[jɨ]
	jw	[jɜ]

2.4 Writing

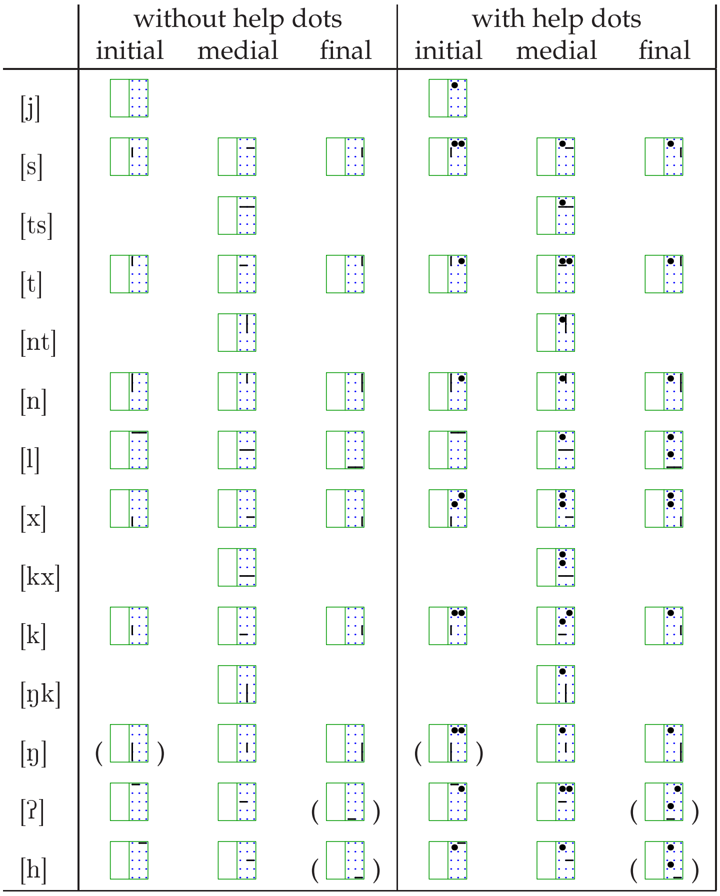
Letters are aranged on a grid. Each glyph contains one stem, so one or two syllables are written into one glyph. The letters are written differently depending on position. The following overview shows the arangement. Colours indicate how the letters are placed in different positions.



Note that it is not yet finally decided whether palatalisation will be written with the letter 'i', or by a separate dot. The grid shows both. This document my shift around from time to time. I'm still experimenting.

2.5 Consonants

In the following table, those letters given in parentheses are not used in the language but can theoretically be written. The initial consonant may be followed by a palatal glide influencing it. Although this is regarded part of the vowel cluster, it actually effects the first consonant strongly.



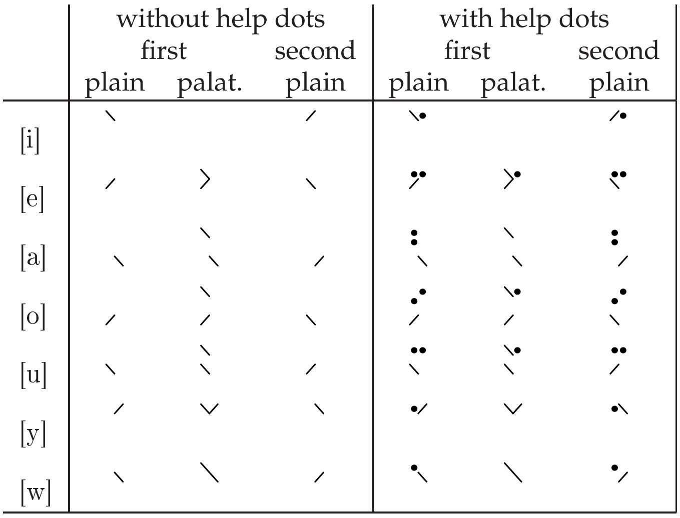
The help dots are inserted from top to bottom to make clear at which position a letter is located. If a dot is shown then that column or row do not contain any lines.

This makes the interpretation easy if a character appears without the box that is shown above for demonstration. The following table shows that otherwise, it would be hard to tell what is the absolute position of a line in the grid.

	without help dots			with help dots		
	initial	medial	final	initial	medial	final
[j]						
[s]						
[ts]						
[t]						
[nt]						
[n]						
[l]						
[x]						
[kx]						
[k]						
[kx]						
[ŋ]	( )			( )		
[ʔ]			( )			( )
[h]			( )			( )

2.6 Vowels

	without help dots			with help dots		
	first		second	first		second
	plain	palat.	plain	plain	palat.	plain
[i]						
[e]						
[a]						
[o]						
[u]						
[y]						
[w]						



2.7 Orthography in Foreign Languages

When using $\mathcal{S}_2$ romanisation in other languages, it is allowed to change the Romanisation a bit to match the rules of those languages. In particular, the following changes make life easier:

- ’ (glottal stop) may be written as ‘q’
- ‘N’ (velar nasal) may be written as ‘ng’

These changes are explicitly allowed, because capitalisation and punctuation should not be messed up.

Other changes should not be performed to prevent an explosion of possible orthographies. The following typical changes some languages would apply are explicitly **forbidden**, except for explanations of pronunciation.

- ‘x’ (velar fricative) may not be written as ‘ch’ or ‘kh’.
- ‘w’ (open-mid centre vowel) may not be written as ‘eu’.
- ‘t’ (voiceless alveolar stop) may not be written as ‘d’.
- ‘k’ (voiceless alveolar stop) may not be written as ‘g’.
- ‘e’ (open-mid front vowel) may not be written as ‘ä’, ‘é’, ‘è’ or ‘ê’.
- ‘u’ (close back vowel) may not be written as ‘ou’.
- ‘y’ (close centre vowel) may not be written as ‘ı’.

2.8 Phonotactics

Because $\mathcal{S}_2$ is an isolating language, its words are pure stems. We now describe the structure of such a stem.

A stem consists of an arbitrary count of syllables following the pattern CV or CVC, where C is a single consonant and V is a monophthong or a diphthong. The first C may be palatalised. The following constraints reduce the number of possible syllables.

- Glottal consonants ([h] or [ʔ]) do not occur at ends of syllables.
- Velar nasals ([ŋ]) do not occur at the beginning of syllables.
- Diphthongs only occur in the first syllable of a stem.

When several syllables are combined to a stem by concatenating them, the following constraints are placed on two adjacent consonants:

- Two adjacent consonants inside a stem must either form an affricate, or
- be a nasal followed by a plosive at the same place of articulation (i. e., [nt] and [ŋk] are pronouncible).

$\mathcal{S}_2$ stems are mono- or bisyllabic. Longer stems only occur with foreign words. The syllables of such words are written in one character each.

2.9 Timing

All mora should have about the same length. A mora is assigned by consonants: the patterns CV, CjV, C are one mora each: palatization does not add a mora.

Examples: Hwk se xok u set are 8 morae: hw, k, se, xo, k, u, se, t. Also note that single plosive mora tend to be devoiced and sometimes aspirated, depending on dialect. Dialects that like to aspirate also tend to devoice isolated 'l' mora.

The timing rule applies to all stems, mono- and polysyllabic.

The sequences 't+s' and 'k+x' will unite into an affricate, and therefore eliminate the single consonant mora of the plosive. This happens inside words and across word and phrase boundaries, too. (This applies to 't+sj', too).

FIXME: This rule may be subject to change. I'm still experimenting..

2.9.1 Pitch, Stress and Comma

Each syllable is assigned a pitch. There are two pitch levels, low and mid. These are vaguely equivalent to the IPA pitches 1 and 3. Southern dialects have also a high pitch (IPA 5). Syntax defines which pitch is to be used by defining which syllables are stressed.

Words that are the last child of a node in the syntax tree are accented. Non-accented words get mid pitch.

In southern dialects, the last word of an accented sequence is assigned low pitch, all others high pitch.

For northern, standard dialects, all accented syllables are assigned low pitch.

In polymoraic stems, all mora are pronounced equally accented/pitched.

Pauses may be inserted after the last low pitched stem of a low-pitch sequence. Commas must be placed after all accented words in the romanisation.

Figure 2.1 depicts the pitch assignment for southern dialects.

Usually, northern pronunciation will be depicted.

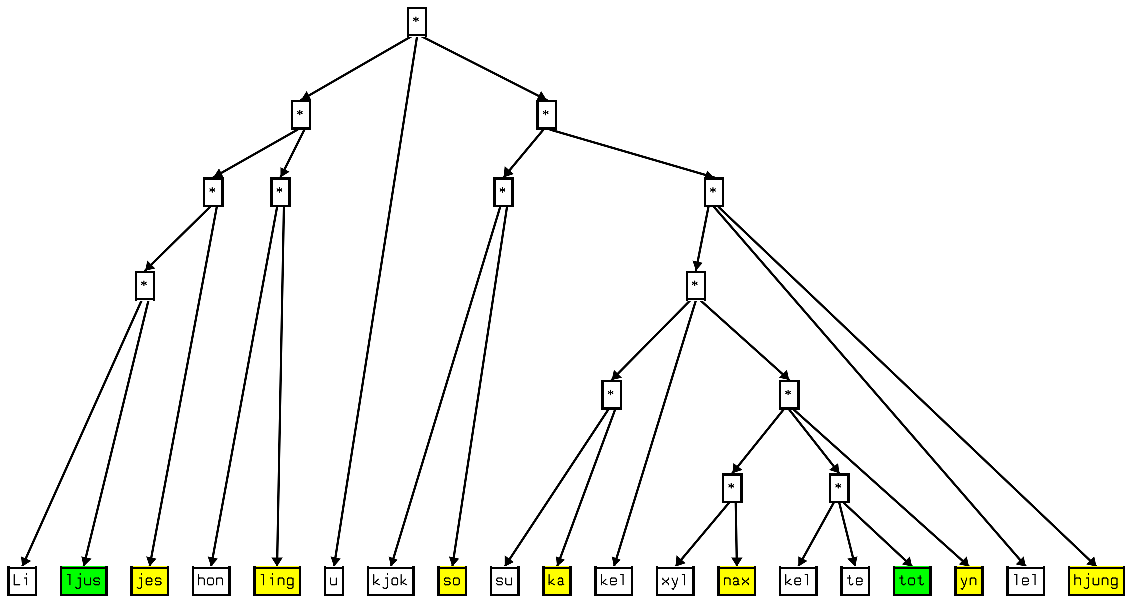


Figure 2.1: Yellow syllables get low pitch, green ones high pitch, all others mid pitch.

2.10 Phonetic Rules & Pronunciation in Dialects

$\mathcal{S}_2$ is designed to have a standard pronunciation and several dialects. Some of the following phonological rules are used by all dialects, some rules only by a few.

None of the following phonetic rules is expressed in the orthography of $\mathcal{S}_2$. This section might also me names 'From Phonemes to Phones'.

- A mandatory rule for all dialects is that nasals at word boundaries adjust their position to that of a following plosive.

  [n], [ŋ] + [t] → [nt]
  [n], [ŋ] + [k] → [ŋk]
  [n], [ŋ] + [q] → [ɴq]

- In all dialects, 'hj' is pronounced [ç].
- In most dialects, the sequence 'sj' is pronounced [ʃ], others keep [sj].
- In some dialects 'hi' is pronounced [çi] and 'si' is pronounced [ʃi]. This is not considered the standard pronunciation.
- In most *northern dialects*, duplicate consonants at word boundaries are spoken as long consonants (geminates).
- In most colloquial dialects, the glottal stop is dropped almost completely. All kinds of morae collapse when a syllable starts with a vowel or with 'j':
  - C# + V -> CV (e. g. *ni.n.a.t* → *ni.na.t*)
  - Ci# + V -> CjV (e. g. *ni.e.xu.l* → *nje.xu.l*)
  - C# + jV -> CjV (e. g. *a.t.ja* → *a.tja*)

  Only between other vowels, the glottal stop is sometimes pronounced, especially if the colliding vowels are identical. Additionally:

– y + i -> y + ji (e. g. *y.i* → *y.ji*)

C + C → Cː

In contrast to that, most other dialects simply eliminate one of the consonants.

C + C → C

(Note that this eliminates morae, which is important to know for poems. Most poems are written for the standard dialect.)

- In *southern dialects*, voice assimilation applies. Voice is non-phonemic, so it is fully comprehensible to always keep t, s, k, x, sj and hj devoiced. However, in a voiced context, these consonants tend to be voiced, too. E.g. 'king ka' is usually pronounced [kiŋɡa] and 'kin sa' becomes [kinza]. This voicing also applies for fricatives: 'kitsa' = [kidza].

  In *northern dialects*, voice assimilation only applies to plosives and affricates: t, ts, tsj, k, kx. So 'kin sa' is pronounced [kinsa].

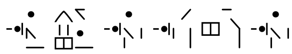
  Please note that there is a strict difference between voiced 'hj' (voiced palatal fricative) and 'j' (voiced palatal approximant).

  (If the dialect likes to devoice single consonant morae, this voicing does not occur after such a mora, of course. So the pronunciation of 'kik ta' would be [kikta]).

  (This voicing rule is similar to that of Korean.)

- In a few *northern dialects* that are not exposed to much communication with other dialects, velar consonants (and even consonant clusters) move backwards to become uvular if they follow a back vowel. This uvularisation moves left-to-right.

  V[+back] + C[+velar] → V C[+uvular]
  Ca[+uvular] + Cb[+velar] → Ca Cb[+uvular]

  Note that this rule also applies across word boundaries. So  (the hexadecimal number 0x510) is pronounced [kɯl ʔil xɯqːiŋ ʔɜɴ χɯq]

  Most speakers from other dialects fail to imitate this.

- Some *southern dialects* do not distinguish [ɜ] and [ɨ]. Both sounds collapse to a central mid vowel, a schwa: [ə].

- Some *eastern dialects* do not distinguish [ɨ] and [i] but pronounce both as [i]. The same rule applies to [ɜ] and [ɛ] which both become [ɛ]. The rule is:

  V[+central] → V[+front]

The normal northern dialect (long consonants, but no uvularisation) is considered the standard way of speaking. The standard, northern pronunciation is usually clearer and more elegant wrt. phonetic constraints that most other dialects, which are less distinctive.

Please note that there are quite a lot of articulation points of fricatives (s, sj, hj, x, h), but no phonemically different fricatives at the same point of articulation.

2.11 Generating Stems

There is a computer program that generates stems for $\mathcal{S}_2$. It comes with the $\mathcal{S}_2$ distribution and is called `s2makestem.cc`; a Makefile is provided for compilation.

The programs first command line parameter is the number of syllables (defaults to randomly generate one to three syllable words), its second parameter is the number of words to generate (defaults to 100).

If the option `-t` is added, the output becomes IPA compatible LaTeX code.

If the option `-p` is added, a simplified particle stem is generated.

2.12 Foreign Words

Sounds from foreign language, like names, are incorporated into $\mathcal{S}_2$ by either shifting the sounds to the closest pronouncible pattern, by occasionally dropping sounds, by separating vowel groups with glottal stops and seldom by introducing new syllables duplicating a vowel in order to be able to articulate consonants clusters. Dropping consonants is more frequent, though. Rules for monosyllabic stems may be used to judge what is pronouncible. Each syllable is written in one character. The first one contains the semantic information, the others are pure pronunciation syllables.

E. g., the German name 'Matthias' becomes 'na-ti-?as'. 'Henrik' becomes 'hen-lik'.

2.12.1 Typical Adjustments for Foreign Sounds

bilabial sound → alveolar sound,

rounded vowels → unrounded vowels,

vowel clusters either the most prominent vowel or several syllables, using glottal stops for separation. Sometimes, diphthongs are rendered as V1 + h + V2: e. g. 'ai' is rendered as 'ahi',

consonant clusters either some consonants are dropped or several syllables are used, using the close center vowel or some vowel from the neighbourhood for syllable completion,

palatal sound → alveolar or velar sound (depending on position) e. g.Icelandic 'banki' would be become tahuN-ki , but Mandarin 'xin' would become sin,

uvular, pharyngeal, laryngal sound → velar sound.

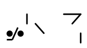
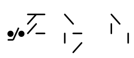
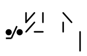
[j] sometimes 'i', sometimes left out,

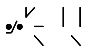
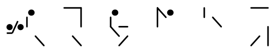
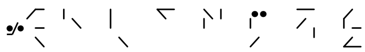
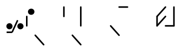
[w] sometimes 'n', sometimes 'u', sometimes left out,

Other features are simply left out (tones, vowel length, stress, aspiration of plosive, etc.). Long consonants are usually also not taken into $\mathcal{S}_2$ names.

Usually, foreign words are split into several monosyllabic stems instead of using bisyllabic ones. This happens, because stress on parts of foreign words sounds strange to $\mathcal{S}_2$ speakers. Collapsing into one word sometimes happens when a word is not felt to be foreign anymore.

Examples of Adopted Names

- Linus Torvalds → 
- Björk → 
- Reykjavík → 
- Beijing → 

- Taiwan → 
- Fran cois Mitterand → 
- Heidemarie Wiecorek-Zeul → 
- Saddam Hussein → 

2.12.2 Semantics of Sounds

In many words in $\mathcal{S}_2$, the sounds are related to the meaning. Here is a vague, incomplete list. Note that this are preferences only.

h, ? indicate closeness to agent or speaker

alveolar consonants and front vowels indicate 'after', 'leaving'
'large', 'high', 'strong', 'good', 'open'

velar consonants and back vowels indicate 'before', 'coming' (the air in the mouth comes from the back)
'small', 'low', 'weak', 'bad', 'close'

central vowels (y, w, a) indicate average

palatized vowels indicate change

plosives relate to location

fricatives relate to time

high vowels relate to location

mid-low vowels relate to time

Several regular changes occured when ancient $\mathcal{S}_2$ underwent sound changes.

diphthong iu became i or ju

diphthong oe became o or jo

diphthong ie became i or je

diphthong uo became u or jo

initial N became n or k

2.12.3 Short Words

The following lists the CV (one consonant, one vowel) words:

	i	e	a	y	w	u	o
l		EMPH	turn, become		to last	do	
t							
n							
s	go-from					REF	so, correct
k	together			DET			
x		SKIP					START
?	NULL			be-at		and	
h			YN		happen-when		

The following lists the CjV (one consonant plus palatized vowel) words:

	je	ja	jy	jw	ju	jo
l						
t	NEG	become not		to last not	do not	
n						
s						start-at
k	open				go-to	close
x		last-until				
	you	he/she/it				I
h						

The following lists ?VC (glottal stop, vowel, consonant) words:

	t	s	n	l	k	x	ng
i	say, talk			power of			
e			near				
a	WHICH				water		
y			jacket				
w							
u				harass			
o						END	
h							

Chapter 3

Syntax

To start with, three rules will be introduced that are the guts of the grammar of $\mathcal{S}_2$. Because of their importance and frequence of mentioning in this document, they will be called the Basic Rules or simply the Rules.

The definition about who is agent and patient is given in detail in Section 5.1.1.

This chapter gives a detailed overview of the syntax. Some of the following chapters will specialise in word categories found in other languages, e. g. English, and show how their function is modelled in $\mathcal{S}_2$.

3.1 Basic Principles

$\mathcal{S}_2$ has only two syntactic word categories: *governors* and *particles*. Phrases and governors may require other phrases to be attached to them to make them complete. This is called *saturation*. The phrases that must be added will be called *sub-ordinates* or *dependents*, while their governor is called *head*. Usually, it is easiest to think of governors as verbs and of sub-ordinates as agent or patient.

Please note that the term 'saturation' is used a little bit off the standard in $\mathcal{S}_2$. It is not used for adding agents to verbs. This is done, because adding agents and forming genitive constructions is the same thing in $\mathcal{S}_2$. And because you can add another genitive modification to virtually anything, it is not a process of saturation, but of extension. However, the *valence* of verb may still require that an agent be added via genitive.

By this naming convention, a *saturated verb* is one that behaves like an intransitive one, i. e., all the objects are added.

3.1.1 Basic Grammar Rules

Sentences are formed by three principles.

Saturation. Objects are added to form a *saturated phrase*. Objects are usually saturated phrases themselves.

Genitive. This is used similarly to genitive constructions in other languages. It is also to add controllers to saturated phrases. This includes adding *agents* to saturated verbs.

Deciding whether a genitive or an agent binding is used in another language will depend on whether you regard the sub-ordinate phrase as a verb or a noun: 'my drinking of coffee' and 'I drink coffee' will be the same phrase in $\mathcal{S}_2$.

Particle constructions. Particles are small words that are used to compose phrases in ways not covered by the two previous principles.

Three categories of particles will be distinguished: nullary (at the end of a phrase), unary (directly before a phrase) and binary (between two phrases).

FIXME: Topic marker? Composite nouns (like 'xiōng dì jiě mèi' in Mandarin)?.

3.1.2 Context

$\mathcal{S}_2$ is a high context language. Sentences are often so ambiguous that translating them into another language requires a lot of understanding of the underlying text. Although $\mathcal{S}_2$ has the means of being precise, the usual way of forming sentences is to rely on the context and leave out everything that is clear.

The $\mathcal{S}_2$ sentence structure makes ambiguity problems very overt, as there are no signals that indicate how sentences are embedded. The boundaries of auxiliary clauses must be inferred from the context.

Example

Take the sentence

good man see me

The above sentence can be translated in several ways, because the order of composition is unclear:

- A good man sees me.
- It is good that a man sees me.

This is possible, because the action of perceiving the man can be the patient to the verb 'good' (Note that *man see me good* is also a correct translation for 'It is good that a man sees me', with a slightly different meaning, see Section 5.1.1 for details).

To specify what precisely is meant in the ambiguous sentence above, $\mathcal{S}_2$ offers the possibility to clearly disambiguate the meaning, though the meaning is usually assumed to be understood from the context.

3.1.3 Motivation of Word Order by Constraints

$\mathcal{S}_2$'s grammar should fulfil the following constraints.

- Word order alone should express saturation and genitive. So no additional words (including particles) should be necessary.
- If composed phrases are to be extended, the parts involved should behave like atoms and not change again (e. g. in German, if you have the infinitive 'Kaffee trinken' and you add a subject, it changes heavily: 'ich trinke Kaffee').
- Embedding of sub-ordinate phrases should work without additional words by simply using the phrase as an atom.
- Ambiguities of the parse tree of a sentence should be minimised. This criterion is weaker than all others: we will cope with ambiguities.

Furthermore, it was decided that all parts that are clear from the context may be simply left out and that the context plays an important role.

Many possible ways of composition were tried and checked for the constraints. The following word orders were considered to be used, because they were the only ones, apart from total reversal of the words, that fulfilled all needs. The decision for this and not the reversed order was made, because the author liked it this way.

To make things clear, the author has not renamed the standard word order schemata to match the active case marking in $\mathcal{S}_2$. We still say write SVO (subject verb object) instead of AVP (agent verb patient), which would be more precise.

Word Order 1: SVO

- Saturation is performed by adding patients to the *right* of the extending phrase.
- Genitive is performed by adding the agent to the *left* of the extending phrase.
- Particles would be *between* (if binary) or *before* (if unary) the related phrase(s).

Advantages

- in a simple sentences, there is no problem whether a saturation took place or a genitive construction, because they attach to different sides of the verb.
- The control structure is simple: controller before controlled (the agent controls the verb, the verb controls the patient). No other word order fulfils this criterion (apart from the reversed word order OVS, of course).

Disadvantages

- even in quite simple sentences, the order of embedding is not clear: 'i watch you run' maybe 'i watch [you run]' or '[i watch you] run'. This is a serious problem, because the semantics of the two analyses is totally different. The second analysis even has two readings.
- if a verb takes more than one patient, say patients A and B, it cannot be decided from syntax alone whether both are attached to the verb, or whether the second was left out and 'A B' are in fact the only first patient connected by a genitive construction. So the same problem as VOS has for patient/agent occurs here for patient 1/patient 2. Although less frequent, this is the same problem.

  Although $\mathcal{S}_2$ verbs never have two patients directly, the curried version (a verb that takes a patient and yields a verb that takes a patient) does exist and, of course, is isomorphic. So this problem will occur in $\mathcal{S}_2$.

The sentence *i drink tea good* has **5** analysis trees when including the possibility of an ellipsis.

FIXME: draw the trees.

.

Word Order 2: VOS

Both saturation and genitive attach to the *right*.

Advantages

- embedding order is clear: 'good drink tea i' is different from 'drink good tea i' (the order with SVO for both sentences is 'i drink tea good').

Disadvantages

- even in simple sentences like 'drink tea I' it is not clear whether 'tea' and 'I' are combined by a genitive while leaving out the agent, or whether 'tea' is the patient and 'I' is the agent.
- most badly, deeply nested sentences will start with a lot of verbs. Because $\mathcal{S}_2$ will not have SVC (serial verb construction), we cannot easily resolve this problem.

The sentence 'good drink tea i' has **9** analysis trees (6 of them because of an ellipsis and the combination of 'tea i' as the single patient/agent).

The sentence 'drink good tea i' has **FIXME: count** analysis trees.

Other Word Orders

OVS: structure is like SVO. The author likes SVO better.

SOV: structure is like VOS. The author likes VOS better.

VSO and OSV: with a configurational language, i. e. one that allows V + O to form an own phrase, VSO implies that the phrase VO has to be split to add the S. This violates the constraint of atomic phrases. The author wants $\mathcal{S}_2$ to be configurational, so these orders were not considered.

Conclusion

The author chooses **SVO** as the word order for $\mathcal{S}_2$, because it has fewest problems and nice properties.

The problem of double saturation, e. g. of verbs like 'to give' or 'to tell' that usually take two patients, has to be taken into account. Often, additional verbs are used. Other verbs, like 'to be like', which have two patients, but no agent, are allowed to be used without additional verbs.

3.2 Genitive = Agent Assignment

When trying to translate *I drive car* closely into another language, usually genitive constructions will be used: 'My car driving.' This is, because in $\mathcal{S}_2$, adding an agent is often the same as genitive constructions in other languages.

We will investigate what other languages use a genitive for to see what the difference is compared to $\mathcal{S}_2$.

Genitive, in general, adds a specification of a class or kind. This is a vague defition, so the following list shows possible relations a genitive can express in other languages. Maybe there are more.

- *possessive*: 'the father's car'.
- *anti-possessive*: 'the slave's master'.

- *ancestral*: 'the father's son'.
- *equally-related*: 'the sister's brother'.
- *partitive*: There are three shades:
  - *quantitative*: 'a cup of tea', 'drei von zehn' = 'three *out of* ten'.
  - *selectative*: 'father of the family'.
  - *aggregative*: 'family of the father'.
- *congregative* 'group of people'.
- *final* ('Kaffeetasse' = 'a cup *for* coffee').
- *subjective* and *objective*: genitive with gerund (or a normal verb that is used as a noun) object and subject binding (ambiguity in Englisch (same in German): 'betrayal of a 14-year old': object or subject?).

  In $\mathcal{S}_2$, there are agents and patients rather than subjects and objects. So these shades of the genitive will be called *agentive* and *patientive*.
- *locative*: 'street festivals of New York'.
- *appositional*: 'city of New York'.
- *initiative*: agent of a predicate whose object is given: 'driver of the car'.

Languages vary in what they allow in genitive constructions. To allow comparisons, in the following, the term 'genitive' will be used even in languages that do not have a genitive case. It seems sensible to use it for 'of' constructions in English, 'de' in French, 'de' in Mandarin, compound nouns in German and English, etc. Further note that the term 'partitive' is used for a special case in Finno-Ugric languages which is *not* used for (exactly) the semantic relations given for the 'partitive' item above.[1]

The above classifications must be distinguished to understand $\mathcal{S}_2$'s system. $\mathcal{S}_2$'s system is totally different: genitive, in general, is only possible of the modifier is the controller. The reason for this is the agent-patient structure in $\mathcal{S}_2$.

Recall that we will call the attachment of an entity to the right of a phrase a genitive construction in $\mathcal{S}_2$.

3.2.1 Agentive Genitive

Obviously, *agentive* usage is possible in $\mathcal{S}_2$ and used for the literal translation of the sentence at the beginning of this section. Agentive genetive is used to attach an agent to verbs. So this is the basic form.

3.2.2 Patients: by Saturation

Because of the structure, we can immediately exclude *patientive* usage, since that is patient saturation in $\mathcal{S}_2$. In $\mathcal{S}_2$, *patientive* usage is not possible, because patients must be put behind the word being saturated.[2]

[1] In Finnish, selectative and aggregative meaning are not expressed by partitive case, but by genitive case: 'perheen isä' vs. 'isän perhe'. One (but not the only) application of partitive case in Finno-Ugric languages is quantitative meaning, where in some languages (including older forms of German: 'ein Stück Gebäcks') genitive case is used. (In French, Finnish partitive constructions often coincide with 'de' + def. article constructions: F: 'Je bois *du* thé' = FIN: 'Minä juon tee*tä*.' (E: 'I drink tea.'). I was told that in Russian, the distinction between accusative and genitive usage is the same as in Finnish accusative vs. partivie usage.).

[2] I think that in English, there is some tendency like this in compound words, which does not occur in German. I could not come up with many examples, but maybe 'tell-tale expression' shows the point (object behind verb).

3.2.3 Appositions: by Saturation

In $\mathcal{S}_2$, *appositional* usage is not possible, but can be replaced by a patient saturation: using a predicative verb with a patient is possible so no copula is needed. E. g. in German, appositional isn't possible either ('city of New York' in German: 'die Stadt New York' which is a normal apposition without genitive marking).

City Nju-jok
'New york is a city. (This can be used for embedding.)

So $\mathcal{S}_2$ does not really have appositions, because they are immediately verb-patient constructions. E. g. 'Brutus caesarem imperatorem interficet' → *Ty-lu-tus kill imperator Se-sal*. Here, 'imperator' is a predicate, thus, a verb.[3]

3.2.4 Multiplicative Genitive

For numbers, *multiplicative* usage is additionally possible in $\mathcal{S}_2$. This could be interpreted as selectative genitive of an infinite amount (if $\mathcal{S}_2$ allowed selectative genitives, which it doesn't). There is no plural marker in $\mathcal{S}_2$, so it is not distinguishable whether to analyse partitive or multiplicative.

The analysis would be something like : 'apple three: 'three=patient of 'to be apples' = 'three (ones) are apples'.

apples three
Three apples
'three (ones) are apples.'

Multiplicative words like 'once', 'twice', etc., are expressed in $\mathcal{S}_2$ by simply using a number before a verb.

I hit three.
I hit three times.
'I (have) three hits'.

This construction is used for base units in general in Tyl Sjok. '20' is also 'ten two' = 'two times ten' and 'two seconds' = 'second two'. Like with powers ('two ten' = '$10^2 = 100$'), an 'exponent' can be used in front of the unit: 'two second' = 'minute' (or also 'the second second').

3.2.5 Quantitative Genitive

In $\mathcal{S}_2$, *quantitative* usage is possible in the same way as multiplicative, but for uncountable things. An analysis would be that in 'tea cup', 'cup'=patient of 'to be tea/to have tea' See the system by the similarity between 'tea three', 'tea cup' and 'tea cup three'.

3.2.6 Final Genitive

Final usage is possible in $\mathcal{S}_2$: 'cup tea' can be analysed as 'the tea is cupped or 'the tea is in a cup' or, because there are no marked moods, 'the cup may/shall have tea'.

An alternative analysis would be that, if you want to stress the final meaning, the verb 'for/to serve' may be used: 'for tea cup': 'the cup is for tea'. Then 'tea cup' is a shortened form.[4].

---

[3]This is not like in Mandarin which uses its copula: E.g. E: 'Jie, my friend, came to my place to have something to eat.', Mand: 'Jiè shì wǒ de péngyǒu lái wǒ jiā chī fàn.'
FIXME: Is this correct?.

[4]Note that French does not allow final usage. It uses 'à' for final usage: 'tea cup' = 'tasse à thé', 'cup of tea' = 'tasse du

3.2.7 Ancestral: Genitive or Saturation

The ancestor is always in control.

Sometimes, the sentence keeps quite clear by this:

tall father peter
Peter's father is tall.

This is, because no descriptive meaning is possible. It would have to be rendered with a coordination:

tall peter SEQ father (he).
Peter, who has a father, is tall.

However, sometimes, the genitive construction is ambiguous:

tall father son
The son's father is tall.
The father's son is tall.

You would use a REF particle then to change the focus. This happens at top-level, too: even very short sentences might be ambiguous:

father son
The father has a son.
The son has a father.

When the relation is on the same level, one of the participants acts like a static verb, the other as a patient. The modifier then comes first:

brother sister
The sister has a brother.
the brother's sister

3.2.8 Selectative, Aggregative, Congregative: by Verbs

In $\mathcal{S}_2$, *selectative genitive* is directly possible, all other's aren't, but are expressed by selectative.

For groups or parts, the group/part is in control of entities being part of the group.

Note again: it cannot be seen which one is modified if control defines the order. Only if both parties have equal control, the second entity is modified by the first.

To disambiguate the referent in a matrix clause, use the REF particle:

family REF father
father of the family (selectative)

REF family father
family of the father (aggregative)

group REF person
a person of the group (selectative)

REF group person
a group of people (congregative)

The same holds for quantifiers: phrases like 'one of us', 'all of us', 'some of us' etc., are translated in the same way:

We some eat.
Some of us eat.

---

thé'

WHICH they two
who of the two

Please note: the verb 'to have' may be used for possesive usage, if the possession is to be stressed.

For selectative, aggregative and congregative usage, 'be part of' has to be used. Note that 'to have' can often be left out if the context makes the situation clear.

Caution: Do not mix up the usage! In $\mathcal{S}_2$, 'to have' can neither express selectative, nor aggregative, nor congregative. You have to be more precise if you use a verb. If you don't want to be precise, leave out the verb.

Probably wrong:

have leg I
I have a leg. (But this sentence is not about mine.)

Instead:

be-part-of person leg
person leg
the person's leg
(but also: the leg's person)

3.2.9 Possessive Genitive

Possession immediately implies control.

He like you car.
He likes your car.

(Note: as an experiencer, 'he' is in potential control, and is therefore assigned the agent slot.)

The control for a possessive is also selected if the possessed is also in control, too:

He like you friend.
He likes your friend.

But not the contrast to the following paragraph.

3.2.10 Anti-Possessive: by Saturation

In the phrase 'the slaves's master', the master is definitely in control and possession is vice versa. In this case, the slave cannot get a controlling agent slot.

3.2.11 Locative Genitive?

In $\mathcal{S}_2$, pure *locative* usage is not possible. A location verb is usually used. However, a genitive can imply some kind of partitive meaning, so in the above example, street festivals not only take place in New York, but have become part of it. In this case, locative meaning can be expressed by using a genitive in $\mathcal{S}_2$. This is quite similar to German and English usage.

3.2.12 Initiative Genitive

Very closely related to the agentive genitive is the initiative genitive.

In $\mathcal{S}_2$, *initiative* is expressed by using the verb and possibly a NULL particle: 'the driver of the car' = *NULL drive car*. The NULL particle usually implies that it is referred to, so no REF particle is needed. Of no reference is wanted, even NULL is often dropped.

So *drive car* may translate to the following sentences.

there's car-driving	*have drive car*
someone drives a car	*SKIP drive car*
driver of the car	*NULL drive car*
the car-driving	*REF drive car*
the driven car	*drive REF car*
to drive a car	*drive car REF*

Cf. Chapter 8 about particle usage. In such a short sentence, usually the particles are used unless the context does not allow that.

Further note that 'to drive' is translated to 'to move' in $\mathcal{S}_2$. And because there is a mechanism called default verbs (see Section **??**), the verb may even be dropped completely.

3.2.13 Ordinals: By Saturation

A special genitive is used for ordinals: 'fourth event' = 'four event'. An analysis would be: the four controls/selects the event. But see the difference to an appositions: 'imperator Se-sal' = 'Cesar, the imperator' and 'one imperator' = 'the first imperator'.

Note that the ordinal genitive may be used for adjectives, too. It then indicates superlative or order: *one red* = 'first red' = 'the reddest'.

Conceptionally uncountable things like 'coffee' are directly countable in $\mathcal{S}_2$ by assuming an implicit partitive before the counting takes place. This is like in English (or German): 'two coffees' is interpreted as 'two portions of coffee'.

3.3 Syntax Rules

$\mathcal{S}_2$ distinguishes the level of saturation for every governor. Unsaturated words are often referred to as verbs. Verbs may subcategorise to have their agent and/or patient slot filled in in order to be saturated.

Verbs that have only one slot to saturate are called *intransitive verbs*. Those that have two are called *transitive verbs*.

In $\mathcal{S}_2$ there are no verbs that have more slots that agent and patient. However, valence sometimes needs more slots (e. g. the verb 'to give' or 'to be like' (which would need two patients)). Auxiliary constructions will be described in the following section.

Saturated composed phrases behave exactly like saturated single word lexicon entries.

3.3.1 Saturation

Valence 0

Many 'nouns' can be used as stative verbs in $\mathcal{S}_2$. E. g. to express that there is fire, simple say 'fire'. Usually, sentences will use a bit decoration around these monosyllabic utterances, but the principle is just like that. Static verbs of valence 0 have no agent or patient slot, so they are already saturated.

Valence 1a: Agent

Verbs that only have an agent slot are e. g. 'to walk'. Agents are attached to the word to the left, so 'the man walks' would be rendered as follows:

man walk
The man walks.

This is a saturated phrase, so it can be used in other phrases. E. g.

man walk talk
The man, who walks, talks.
The man walks and talks.

In such a construction, one of the constituents of the embedded phrase is 'exported' into the matrix clause. It the case above, the only logical export would be 'man'. In ambiguous cases, there is a special particle (REF) to mark the exported entity in the sub-ordinated clause. Note that *all* sub-phrases may potentially be exported. During the following sections, this will probably become clear.

Valence 1p: Patient

Examples are 'to be red'. The sub-ordinate usually has no control over being red, so it is assigned the patient slot. The patient is attached to the right of the governor.

red book
The book is red.

Again, this is a saturated phrase and can be used in a matrix clause.

man read red book.
The man read a red book.

Promotion

$\mathcal{S}_2$ has something that maybe called promotion. It is the metamorphosis from valence 0 to something else, e. g. valence 1p in $\mathcal{S}_2$. This means that 'the man' can be used as 'being a man'. However, using the verb 'be equal to' is also possible. This verb is often dropped in $\mathcal{S}_2$ in almost all cases even in embedded phrases, so it is more likely to assume valence 1p for 'the man' then. Another example would be 'the taste' which is often used for 'to taste' as if it had valence 1p.

Other valence promotinos are also possible: 'car' may be used as a verb with an agent. It then means 'to drive a car', denoting the 'default action to do with a car'. This is similar to English (especially American): 'to party' is the default for 'to have a party'.

Another examples is 'food' that can be promoted to 'eat'. There are not many other things to do with food, so eating can be inferred from the context.

Actually, the whole phenomenon may be called *demotion* when viewed from the other end of the scale ('food' is the patient of the verb 'to eat'). This may be a better explanation for why *NULL eat* means 'eater' and *eat NULL* means 'the eaten' or 'food'.

Valence 2: Agent & Patient

The group of valence 2 verbs that have both agent and patient is long. An examples is 'to read'.

man read book
The man reads a book.

In this example, promotion of 'book' may be used, too:

man book
The man reads a book.

Valence 2: Two Patients

Some verbs naturally have two patients but no agent. For clarification, an auxiliary is often used to attach the second patient, usually either ‘to harass’, ‘to please’ or ‘to control’. In most phrases, however, it is common to drop ‘to harass/please/control’. Examples are ‘to be like’, ‘to be similiar to’, ‘to be equal to’.

(equal-to) imperator (control) Cesar
Cesar is imperator.

Both ‘to control’ and ‘equal-to’ are usually left out. Then, it looks as if the valence 0 word ‘imperator’ has been promoted to valence 1 with the patient Cesar. (The precise analysis is really irrelevant in $\mathcal{S}_2$).

Valence 3: Agent & Two Patients

An example for a valence 3 verb is ‘to give’. The recipient is is rendered either using ‘to take’ or ‘to arrive-at’ in $\mathcal{S}_2$.

you take I give book.
I give book go-to you.
I give the book to you.

The meaning of these sentences is slightly different. The former expressed active reception, while the second does not.

Modification

Some governors can modify others and yield something that is not saturated. Often, valence is preserved. This is called modification. An example is ‘good’ which can modify ‘to taste’ or ‘to speak’.

man good speak Tyl Sjok
The man can speak $\mathcal{S}_2$ well.

The auxiliary ‘can’ may be left out in $\mathcal{S}_2$, as it is clear from the context.

This modification can be explained easily for promoted valence 1p verbs like ‘to taste’. The following sentence would be no surprise:

good taste meal
The meal tastes good.

Because actually, ‘taste’ is a valence 0 word which was promoted to valence 1p. So we could also have used ‘to have’ here:

have good taste meal
The meal tastes good.
‘Good taste is with the meal.

This explanation, however, it not applicable to verbs like ‘to speak’, where a modification of the verb is clear. Of course, in $\mathcal{S}_2$, ‘with’ can still be used (see Section 5.1.1).

Other examples of modification verbs are ‘very’ or ‘extremely’, etc.

3.4 Particles

Particles are different from governors, because they change the structure of the sentence or the way the sentence must be analysed. They usually do not have a meaning on their own and can, therefore, not be used without a sentence.

The following categories of particles might exist:

Nullary particles modify the whole sentence or utterance. There is no general rule of where they are put. It depends on the particle (example: REF at the end of a phrase)

Unary particles modify one phrase. The particles are put in front of that phrase (example: REF as a modifier).

Binary particles link or separate two phrases. The particle is but in between these phrases (example: SEQ).

Parenthetic particles occur in pairs and influence the words in between them (examples: START, END).

This categorisation of particles into these groups is not very important, it is only given for completeness.

3.5 Subcategorisation

It was not said yet how and when the Rules shall be applied to form a good sentence. To explain this, the following paragraph introduces functional categories.

3.5.1 Functional Categories

Although $\mathcal{S}_2$ does not have concepts like verb, nouns, adjective, etc. at its syntax level, in actual sentences, functions can be identified. The language has concepts like entities, actions, properties etc. These word categories are called *functional categories*.

The standard way of thinking is to assume there are two basic functional categories: nouns and verbs. Verbs often *require* some of the Rules to be applied to form a correct sentence. This is called *sub-categorisation*.

Intransitive verbs like 'to run' require at least one genitive construction in order to bind the agent. Transitive ones like 'to write' may require one or more applications of the saturation rule.

Verbs require the application of Rules to a degree that can be anywhere on a scale between 'always' and 'never'. Additionally, because $\mathcal{S}_2$ is a high context language, if the context can provide the necessary clarifying information, most things may be left out of the sentence.

Adjectives in $\mathcal{S}_2$ are verbs that require either a genitive binding for the agent, or a patient binding, whose property is described. This depends on the type of adjective.

E. g. you could think of the word 'red' to mean 'to be red'. The thing being red (usually) does not influence this, so it is patient. But being cruel, for instance, would require the person to be cruel to be the agent of that adjective in $\mathcal{S}_2$. [5]

[5] This is similar to Mandarin. But unlike $\mathcal{S}_2$, Mandarin adjectives may change position around the noun: 'the wine is red' = 'pútáujiŭ hóng'. 'red wine' = 'hóng pútáojiŭ' ('red' 'grapewine'). However, sometimes, a releaving 'de' particle has to be used: 'good friend' = 'hăo de péngyǒu' ('good' DE 'friend'). This 'de' seems to justify the analysis of 'hăo de' ('good' DE) as a relative clause in Mandarin, so the structure becomes very similar to $\mathcal{S}_2$ again, only $\mathcal{S}_2$ relative clauses are totally different. (To support this claim, look at 'The person who drinks tea is a friend.' which translates 'Hē chá de rén shì péngyǒu' ('drink' 'tea' DE 'person' EQU 'friend'). Vs. 'The busy person is a friend.' which is 'Máng de rén shì péngyǒu' ('busy' DE 'person' EQU 'friend'). Here, 'hē chá de' ('drink' 'tea' DE) is a structure like 'máng de' ('busy' DE)).

3.6 Phrase Composition

Equally saturated phrases[6] in $\mathcal{S}_2$ may be used again to compose larger phrases by the Rules.

Note that the order of the words **never** defines which one is the referent. Modification is possible from both sides, left and right. The reason for this is the rigid rules of control (see Section 5.1.1) that determine the order of the words. This is especially meaningful for expressions that translate to genitives as described in Section 3.2.

There are several ways of interpreting the sub-ordinate phrase:

- as a full sentence:

  I think red car
  I think the car is red

  The translation is often an auxiliary clause (e. g. a 'that' sentence) or a gerund. An infinitive may be appropriate if the subject is missing.

  If this kind of embedding is analysed, no things talked about in the auxiliary clause are restricted:

  I assume you book
  I assume you have the/a book.

  This is interesting, since 'you book' is interpreted in a very original way: as a propositional sentence expressing possessive: 'you have a/the book'.

  In constrast to the meaning if of the full embedded sentence is referenced, all the other forms of interpretation restrict the referenced thing from the auxiliary clause in the matrix clause, i. e., they are attributive (see below).

- as the agent of the phrase that is described by the sub-ordinate clause:

  I repair red car
  I repair a/the red car

  Translations may be nouns with an attributive adjective ('a red car') or a resticting relative clauses or the like. Participles may also be appropriate.

  Here, the original statement 'the car is red' is used to restrict 'car' in the matrix clause by the attribute 'red'. This is in contrast to the full embedding interpretation above, where nothing is restricted.

  Note that a referential meaning is not possible here (dt.: 'Ich repariere das Auto, das ja rot ist.'), the auxialiary clause always has attributive meaning (dt.: 'Ich repariere jenes Auto, das rot ist'). To express referential meaning, two sentences may be used in $\mathcal{S}_2$. E. g.:

  I repair car SEQ red it.
  I repair a/the car, which is red.

  Here, 'it' is used explicitly, because a) otherwise the prosody would be too important to mark the end of the first sentence, b) 'red' alone is too short. It could only be used alone in an elliptic answer to a specific question.

- as the patient of the phrase that is described:

  I repair you destroy car
  I repair the car you destroyed.

  The sub-ordinate clause need not have any subject, in which case a passive construction is most likely used in the translation:

  I repair destroy car
  I repair a destroyed car.

[6] Usually, but not always, fully saturated phrases are composed

Again, the auxiliary clause has always attributive meaning here, never referential meaning (see above).

There are examples that are ambiguous, because valence restrictions do not exclude enough insensible interpretations:

I see you destroy car.
I see you, who destroyed the car.
I see the car, you destroyed.
I, who sees you, destroy the car.
I see that you destroy the car.

Sentences like these have to be disambiguated by using particles. Usually, the *reference particle* REF is helpful:

I see REF you destroy car.
I see you, who destroyed the car.

REF I see you destroy car.
I, who sees you, destroy the car.

I see you destroy REF car.
I see the car that you destroyed.

I see you destroy car REF.
I see the car that you destroyed.

Of course, the interpretation of this construction can be ambiguous. There are several ways of making clear which part of the sub-ordinate clause is referenced in the matrix clause. The most important particle is REF. Its usage and other particles are described in Chapter 8.3.

3.7 Phrase Composition Preferences

These are tendencies only. Context may change them.

Minimal Attachment Principle: Most of the time, there is a preferred way of interpreting the sentence called *the minimal attachment principle*. This principle says that the smaller the syntax tree is that the listener has to build in order to get a valid interpretation, the more like the sentence will be. This holds for each sub-tree, so in short, it means that as sooner as you can apply Rules to the words you hear, the more likely this will be the intended interpretation.

However, this is only the preferred strategy of interpretation if there is no context. If the context is clear, other meanings may be intended. In contrast to many other languages, this principle is a very weak preference in $\mathcal{S}_2$.

Saturate Phrases First: Another principle is that phrases are saturated before composing another phrase with them. Some subcategorisation rules (e. g. for the word 'and') allow unsaturated phrases to combine. Or YN, NEG, etc. particles may span or only take a verb as their subordinate. This principle states that the latter is not the most likely interpretation.

Again, the preference is weak in $\mathcal{S}_2$.

There are particles for changing these tendencies. See Chapter 8.4.

3.8 Sentences

The items used in the Basic Rules to compose larger items need not be atomic. Composed phrases behave just like words. The last word of a phrase is stressed.

FIXME: continue.

Chapter 4

Alternative Approach to Syntax

The previous chapter described how $\mathcal{S}_2$ syntax works. There is an alternative way of analysis that is equally feasible and directly mappable to the analysis used throughout this document.

4.1 Two Categories, One Rule

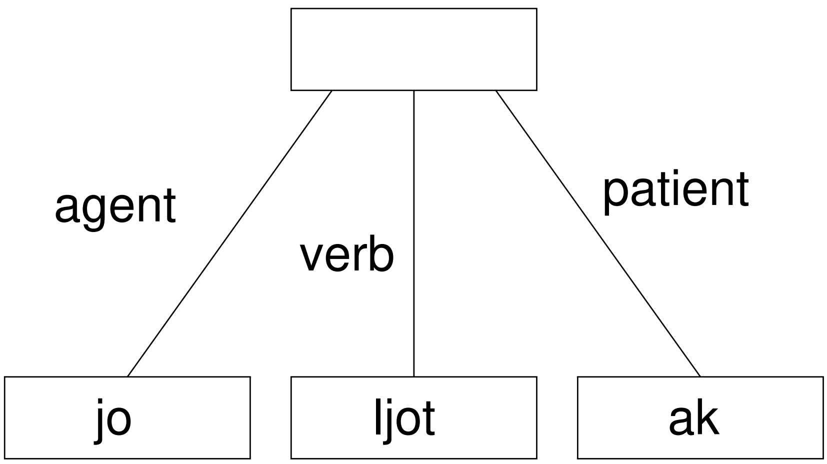
In the previous analysis, there were three syntactic categories in a sentence:

- agent,
- verb,
- patient.

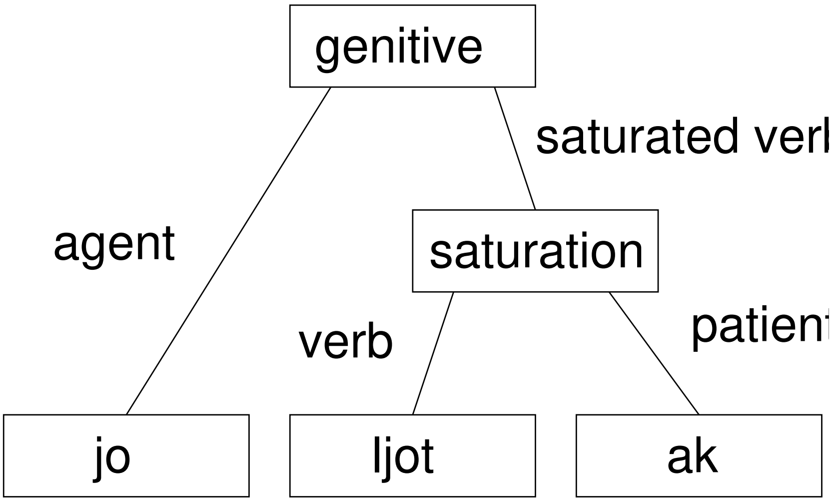
And there were two order rules:

- agent before verb,
- patient after verb.

As an example, take the sentence 'I drink water' *jo ljot ak*. It has the following structure:



Because of its configurationality, the verb+patient part is a completed phrase, so we could split that part off into a seperated sub-tree, depicting the saturation operation, while the attachment of the agent would be done via a genitive construction:



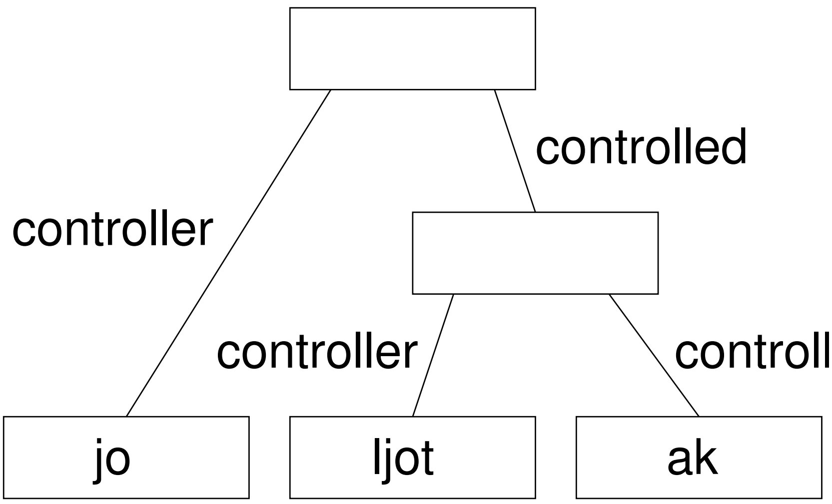
An alternative is to only have two categories of edges:

- controller,
- controlled.

And to have only one category of nodes (i. e., one grammar rule):

- controller before controlled.

The resulting tree has the same structure as the one before:



This approach is sometimes more elegant than the previous. Take the following sentence:

I car
I drive a car.

In this sentence, the default action performed with a car need not be mentioned. There are two different analyses when using the agent-patient approach:

- I.agent EMPTY.verb car.patient
  'car' is a patient, the verb is left out,
- I.agent car.verb
  'car' is a verb.

With the new approach, there is only one analysis making things clearer: 'I.controller car.controlled'.

Throughout this document, we will use the agent-patient analysis, because it usually seems to be easier to think that way. However, we can always analyse an agent-patient structure to the controller-controlled structure:

[A.Agent B.Verb C.Patient] = [A.Controller [B.Controller C.Controlled].Controlled]

4.2 General Ordering Constraint

$\mathcal{S}_2$'s word order is defined by *control* together with a $\geq$-relation.

Let a, b be phrases and $\gamma(a, b)$ be the amount of control a has over b (in whatever measure). For the phrase sequence a b, it must hold that $\gamma(a, b) \geq \gamma(b, a)$.

If and only if the amounts of control are equal, then the modifying phrase comes first.

4.3 Corollary: Control and Modification

As shown in the previous section, $\mathcal{S}_2$ word order is totally dominated by control. Many other language find it more important to mark modification. This shows up very clearly in the difference how $\mathcal{S}_2$ handles genitives and how other language do it.

It was said before that agent assignement and genitive constructions are the same in $\mathcal{S}_2$. Now the alternative syntax analysis shows that genitive and saturation are also exactly the same thing.

This stresses that $\mathcal{S}_2$ does not distinguish between verbs, nouns, adjectives, and whatever other word categories. A possessive genitive 'my car' is exactly the same structure as patient-binding in 'to eat an apple'. You might think if it as 'the process of eatings's apple': the eating is in control. Adding another controller, you get a full sentence: 'I eat an apple.'

It can also be seen more clearly now, why attributive and predicative sentences are no different: because which one is modified is not a major criterion for the syntax. The reference particle REF handles the difference.

Chapter 5

Verbs

5.1 Agent vs. Patient

Often, verbs use the agent slot to express a location or time. If the agent slot is missing, an instrumental can sometimes be expressed by filling the slot if the instrumental expresses the cause (e. g.: *wind open door* instead of *wind cause open door*).

5.1.1 Control

For a language with active case marking based on control like $\mathcal{S}_2$, it is important to know what is meant by the terms 'agent' and 'patient'. The principles are similar to Central Pomo, a North American language. In the following examples, agents will be shown in bold, patients will be shown in italic.

- $\mathcal{S}_2$ assigns the agent slot to performers ('**I** dig a hole'), effectors, instigators ('**you** make me crazy') and (potential) controllers ('**I** decide ...'). So the basic idea is: an agent is in control.

  More or less the rest of the assignment system is different from Central Pomo.

- Everything that is not an agent is a patient. (Central Pomo seems to default to select agents, unless the rules say that the patient slot is feasible.)

- Neither role is restricted to humans or animates or sentients. (Central Pomo restricts the patient to humans.)

- Experiencers are not in control ('*Peter* is frightened/feels cold/gets old/loves her').

- A group are in control of its members. A whole thing is in control of its parts. ('my **family**', '**my** leg').

- Possessors have control ('**my** car'). (The controlled is regarded part of the possessor('s scope).)

- Ancestors have control ('my **father**').

- Taking place or time assigns control. This clarifies the usage with place and time verbs ('**people** in the world').

These rules apply for object and subject assignment with verbs and for genitive constructions. This is because these are the same in $\mathcal{S}_2$.

Verbs need not always use the same assignment of agent and patient: the meaning may be different with different usages.

Note that because of these rules, referents of sub-ordinate phrase cannot be marked by word order or case. The reference particle (see Section 8.3) is used for that.

Many words that describe a property can be saturated either by adding an agent or a patient. The meaning shows nuances that are usually not grammatically marked in English or other nominative languages. Usually, the precise translation needs more words. The phenomenon occurs even in very simple sentences:

Compare the following two sentences:

man work REF good
good man work REF
It is good that the man works.
The REFparticle was used to exclude 'The man's work is good'.

The meaning is different, however. In the second sentence, it is inherently good that a man works which in the first sentence, the being-good is achieved by the work. So more precisely:

man work REF good
'The working of the man makes it (the working of the man) good'.

good man work REF
'That a/the man works, is (always) a good thing.'

Look at the following two examples:

man good speak Tyl Sjok
The man speaks $\mathcal{S}_2$ well.

This sentence expresses: the man speaks (maybe currently) by himself and this speaking is good. (To exclude the possibility that the sentence refers to the man currently speaking, auxiliaries may be used: '... can good speak ...' or '... with good speak ...').

good speak Tyl Sjok man
The man speaks $\mathcal{S}_2$ well.
'Good $\mathcal{S}_2$-speaking is a property of the man.'

The fact that 'man' is patient in this sentence implies: a) it is not referred to the current speaking of the man (since he is no agent, the sentence does not talk about his acting), and b) the man is not in control of speaking well. This could mean that the man comes from a certain area where all people speak $\mathcal{S}_2$ well and the sentence refers to properties of his dialect.

5.1.2 Interesting Verbs

For many verbs it is clear what the agent slot is assigned to and what the patient slot. However, some unclear cases exist that have to be clarified.

Static verbs The default assignment is to assigne patient slot: *red car* = 'The car is red.', *shine sun* = 'The sun shines.'.

However, as shown before, the agent slot is possible to stress a different meaning. In the above example, physicians would probably stress that 'The sun shines.' translates *sun shine*.

Verbs of experience 'Peter loves Mary': the semantic roles are experiencer and patient. Both are assigned a patient slot. The patient saturates first. So this would translate into Tyl-Sjok as *love Mary Peter*.

Inchoative verbs Patient slot: 'The man dies.' = *become dead man.*

All inchoative verbs in $\mathcal{S}_2$ contain *become*.

FIXME: check the lexicon..

Resultative verbs Agent slot to the initiator, patient slot to the patient: 'The man is killed.' = *do dead man*. With an agent: *Peter do dead man.* = 'Peter kills the man.'. There are particles for a) stative verbs ( ), b) inchoative verbs ( ), c) resultative verbs ( ).

All resulative verbs in $\mathcal{S}_2$ contain *turn* and all inchoative verbs in $\mathcal{S}_2$ contain *do*.

FIXME: check the lexicon..

Performative verbs tell, promise, christian, swear

Perlocutive verbs provoke, convince, humiliate

Illocutive verbs threaten

*FIXME: Clarify usage of tertiary verbs: A tell/promise/give B C. Clarify usage of 'to agree *about*'..*

5.2 Auxiliaries

There are no auxiliaries, all verbs are full verbs. However, there are particles and certain full verbs that function like auxiliaries in other languages. That's why this section is named like it is.

5.2.1 Aspect

As usual, if not further specified, the aspect of a sentence has to be concluded from the context. $\mathcal{S}_2$ has some mechnisms to change the aspect, however.

FIXME: Urgent (in order to not have a wrecked lexicon): redo this when the terms are clear.

5.2.2 Mood

The normal mood of a sentence is indicative. This can be changed by particles.

The following moods are expressed by particles and may modify any part of the sentence.

Energicus is marked with the EMPH particle.

Interrogative mood is marked by question words or the YN particle instead of an auxiliary.

Suppositive is marked with the ASS particle.

All other modalities are marked using auxiliaries. Note that often, auxiliaries are dropped if they mark in inferrable mood. For instance, in the right context, the following is an imperative.

drink tea
Drink tea!

To express strong imperative here, use the auxiliary 'want', add the pronoun, use an emphatic particle on the action 'drink'. Or do all of that:

want you EMPH drink tea
Will you drink tea!!

(Also compare German: ‚Trink das!' – ‚Nein!' – ‚Du sollst das trinken!'. This uses the same auxiliary ('sollen' = 'wollen' in Tyl Sjok due to agent marking))

There is no direct way to express *optative* mood, thus, an achievable wish. Use 'want' or 'shall' instead.

FIXME: maybe introduce something.

.

You can emphasis interrogative mood by adding 'to ask (pose a question)' to the phrase.

ask I get-rid body-waste happen-at WHICH
Excuse me, where is the toilet?

It is considered slightly more polite. More politeness can be added by requesting:

The verb 'to request' roughly translates to the politeness idiom 'please'. And *request ask* whould be translated with 'Excuse me, please'. It is equal to Mandarin's 'qing3 wen4 ...'.

5.3 May, Must, Shall, Can

realis	ϵ	action happens
dt. sollte	shall/advise	it is advisable to happen
dt. soll/will	want	someone wants it to happen
dt. muß	must/force	someone forces it to happen
dt. kann, frz. sait/peut	can/enable	all prerequisites are fulfilled
dt. kann/darf	may/allow	there is no law/rule against it
dt. dafür sorgen, daß	cause/make	make s.o. do s.t.; make/case s.t. (to) happen

Note: the auxiliary 'make' is the same word as 'cause'.

Again: these are no auxiliaries. These verbs do not modify the sub-ordinate verb! They all have an own agent and patient slot. The agent is the reason or enforcer, the patient is the action.

Examples

I want read book
I want to read a book.

Here, 'I' is the reason of wanting, and the agent of the sub-ordinate clause 'read book' is attached from the matrix clause, so it is 'I', too. You can assign this slot differently, of course:

I want you read book
I want you to read a book.

You may also use the patient slot of 'want' to express that someone else, who is either specified or not, wants something. This can be translated using 'should' or 'shall' or the like.

Want I read book
I shall read a book. (not necessarily with optative meaning)
dt: Ich soll ein Buch lesen.
'(Someone) wants that I read a book.'

The interesting thing is that these constructions can be used for the other verbs of this class, too.

force I read book.
I must read a book (by external reason).

I force read book.
I must read a book (by internal reason (addict of reading))

Note that in contrast to English, the patient of 'force' has no tendency to not refer to the agent in $\mathcal{S}_2$.

I can read book.
I can read a book (I know how to do it).

enable I read book.
I can read a book (there are no external reasons preventing reading)

And now, for the strange things.

Light enable I read book.
I can read a book since there's enough light.
'The light enables me to read a book.'

Wife force I stay home.
My wife forces me to stay at home.

5.4 Existence and Other Copulas

Not really is there a copula. Instead, a valence 0 word is promoted to valence 1p (with a patient) and used as a predicate.

Usually, the described is in the patient slot, but occasionally, this can be changed to express control of the situation[1]. So promotion of valence 0 to valence 1a is also possible.

The default phrase:

imperator se-sal.
Cesar is imperator. (Inherently, it is his fate, they made him...)

Promotion to valence 1a is seldom:

se-sal imperator.
Cesar is imperator. (By his own will/fault/influence. Made himself...)

In sub-ordinate clauses, this can be used directly:

tu-lu-tus kill imperator se-sal
Brutus kill(s/ed) imperator Cesar.

Some saturated clauses may also be used as predicates.

like monkey Peter
Peter is like to a monkey.

There are ways of clarifying how the construction was done by using additional verbs that compose the sentences without the need of promotion. Often a pseudo copula 'to be equal-to' is used.

Furthermore, a second patient can be attached using 'with', 'to harass', 'to please' or 'to control (dt. lenken)'. The following sentence shows this, but this sentence is usually considered overloaded with clarification, because that construction neglects the fact that there is promotion.

equal-to imperator please Cesar
Cesar is imperator.

Of course, in rare cases where where it is unclear whether 'to have' or 'to be' is meant, this construction may be used.

5.4.1 Modification

Composed predicates may modify non-saturated governors, too.

Peter like monkey behave
Peter behaves like a monkey.
'Peter does the behaving that is similar to that of monkeys.'

[1]Note that Mandarin uses a copula: the verb 'shì': 'wǒ shì xuésheng'

Or with a patient:

like dog stupid Peter
Peter is stupid like a dog.

Some weird examples:

Peter Idiot
'Peter idiots'
Peter is (behaves like) an idiot.

Idiot Peter
'Peter is idioted'
Peter is an idiot. (inherently)

5.5 Location

The following three verbs exist for describing the place or changing the place of something. They are called Location Verbs in the following.

be-at	y		(•)		
go-to	kju	→	()		also: 'come to', 'arrive at'
go-from	se		()	→	also: 'come from', 'start at'

Some regularities as described in Section 2.12.2 can sometimes be found.

In ancient $\mathcal{S}_2$ se was **tei < *tiu* (indicating more clearly 'come from') until this diphthong disappeared.

Compare the Mandarin words 'zài', 'cóng' and 'dào'. These are generally analysed as prepositions in Mandarin, but originate from verbs. But please note that in $\mathcal{S}_2$, the structure is different from Mandarin: Mand: 'Wǒ zài túshūguǎn kàn shū', $\mathcal{S}_2$: 'I read book be-at library.', E: 'I read a book at the library.' (literally: 'My book-reading takes place at the library.'). This is because $\mathcal{S}_2$ has no SVC and disallows verbs with two patients.

5.5.1 Subcategorisation

These verbs' only patient (because it has no control) is a place, the agent (because it had/has/takes control of the place) is a phrase that happens at that place or during/at the end of the change of place. The translation usually is a preposition construction using 'at', 'from' or 'to'. resp.

FIXME: How to translate 'to come to' in $\mathcal{S}_2$? Should there be a difference between 'come' and 'go' in $\mathcal{S}_2$? Currently, there is none. I tend to mix up 'lái' and 'qù' in Mandarin although the difference is the same as in German, my L1..

I eat be-at sleep.
I eat where I sleep.

5.6 Time

The following three verbs exist for describing time or changing of time. They are called Time Verbs in the following.

happen-when	hw		(•)	
last-until	xja	→	()	
start-at	sjo		()	→

Regularities can be found as described in Section 2.12.2. Non-plosives here show the relation to time, not to location.

In ancient $\mathcal{S}_2$, xja was **xoe* until that diphthong disappeared.

5.6.1 Subcategorisation

These verbs' single patient (because it has no control) is a moment (or a perfective, durative, momentary or commencing action), the agent (because it had/has/takes control of the time) is a phrase that happens at, before or after this moment (or durative action). The translation usually is a prepositional construction: 'when', 'at', 'while', 'before' or 'after', resp.

Note that both moments and actions can be used.[2]

I not eat happen-when sleep.
I don't eat when I sleep.

Note: Location verbs are used before time verbs if they occur in the same sentence. In this case, the location may be left out if it is equal to the time. E.g.

crash car happend-at happend-when I cross street.
The car crash happend when and where I crossed the street.

The construction is occationally used. Especially in the construction *happen-at happen-when I* or the like: 'here and now'.

5.7 Sub-Positioning

To denote parts of a bigger section in either location or time, there are special nouns in $\mathcal{S}_2$ whose agent slot (the owner/controller) is further described. For sub-positioning, $\mathcal{S}_2$ does not distinguish location and time since the Location and Time Verbs disambiguate this in all cases.

inner, inside	
outer, outside	
around	
front, in front of, start, before	sin
back, behind, end, after	xan
over, above, surface	
under, underneath	
left	
right side	

Man go-to house inside
The man enters the house.

Note that the sub-positioning is underspecified with respect to the closeness (although the term 'sub-positioning' suggests that it is still part of the whole). So attachment and detachment are possible interpretations.

Sign be-at house front.
The sign is at the house (mounted to the front).
The sign is in front of the house (but not attached).

I read book happen-at dinner end
After dinner I (will) read a book.
At the end of the dinner I (will) read a book.

[2]This is in contrast to Mandarin, which only allows moments with 'de shihou' constructions (and without a verb due to SVC).

To further specify the difference, Re-Position Verbs may be used.

5.8 Re-Positioning

In order to do re-location in location and time, there is a special class of verbs that have only a patient which is being re-positioned.

exactly
away

If it is clear whether the attaching position or the separated position is meant, these verbs may be left out.

The Subposition Verbs may be used to further specifiy the exact location.

Book be-at away I front
The book is in front of me.

Or shorter:

Book be-at I front
The book is in front of me.

Sign be-at exactly house front.
The sign is at the house (mounted to the front of the house).

Sign be-at away house front.
The sign is in front of the house.

I read book happen-at exactly dinner end
At the end of the dinner I (will) read a book.

I read book happen-at away dinner end
After dinner I (will) read a book.

I read book happen-at near away dinner end
(Shortly, remotely, but not immediately) after dinner I (will) read a book.

5.9 Movement

Verbs describing movement have developed in such a way that a series of verbs is used to describe the precise movement. The structure is very similar to Mandarin Chinese. The basis are the time and location verbs which specify where and when the action takes place. The default way of specifying movements is by location verbs alone. Adding main verbs further specifies the precise way of movement.

The movement is specified by embedding the clause so far using the following verbs in that order:

Speed (normal), fast, slow, …

Initiation (self initiation), push, pull, throw, kick, …

Type crouch, roll, fall, raise, fly…

Point of View come, go, …

Reason leave, return, …

FIXME: Think about this thoroughly..

Verbs like 'enter' or 'exit' are rather expressed by using sub- and re-positioning (e.g. lit. 'arrive at the inner of the room').

Instruments are added by the instrumental verbs 'to use/with' (this makes verbs like 'to walk', 'to drive', ...).

Purposes are added by using the purpose verb 'for' (e.g. to add 'to attack', 'to get', 'to give').

Verbs are saturated before used in the sequence (get, give, . . .).

It is important to see that embedding defines the order of the verbs. E.g. *Peter fast come arrive-at train station* ('Peter' is agent of 'come') but *come Peter push ball arrive-at child.* ('ball' is patient of 'come'). However, the embedding place is usually changed in order to keep the verbs in a row and embedding levels low. So the previous sentence would preferably be rendered as *Peter push come ball arrive-at child*.

A sentence like *Bond fast push roll come return bomb for defence happend-when I(=now) arrive-at Dr. No. feet in-front.* is totally grammatical, but usually considered heavily overspecified.

In contrast to Mandarin, there cannot be a timely order. Words like 'na2 lai2' (E: 'to bring') cannot be formed like this. They are translated by using a purpose: *come for give* instead of the Mandarin construction **take come*. The reason for this difference is that Tyl-Sjok does not compose words in this sequence, but rather uses embedding to describe the movement.

Other types of movement (may) have a different order than in Mandarin (e.g. 'hui2 lai2'), because Mandarin uses modification as a word order criterion, while Tyl Sjok uses control.

5.10 To Have

The verb 'to have' is rendered with the help of the verb *with*, *harass*, *please* or *control* depending on whether the experiencer is in control or not. Often, none of the verbs is used, because word order makes control information clear enough. They may be used for stylistic variations.

I with book
I have a book

I with wife.
I have a wife.

'with' can be used if the experiencer is in control, and also if not. If control is asserted, a possession is implied by this verb.

Another possibility to stress unwantedness is to use 'harass':

virus harass I
I have flue.

The verb 'harass' is always used when a second patient slot would be necessary, but is not available. For example, usually, you would say

I love you
I love you.

But to stress that it controls you totally, you would say:

love you harass I
I love you (I am totally incapable of controlling it).
'Love to you harasses me.'

The verbs *with* will often be referred to by using *to have* since 'with' might be confused with instrumental usage.

As mentioned, these verbs may be left out.

I move have car you.
I move car you.
I drive your car.
*‘I drive you being a car.’ is quite infeasible.

The following paragraph will explain that in that sentence, you may even leave out the ‘move’ in formal language:

I car you
I drive your car.

like monkey harass Peter
like monkey Peter
Peter is like a monkey.

5.11 Default Verbs

In $\mathcal{S}_2$, verbs that describe the expected thing to do with an entity can be left out. It may depend on the context what is meant. Some examples:

sun	to shine
money	as patient: to have
car	as patient: to have
car	as agent: to drive
meal	as agent: to eat
...	

It is usually considered poetic style to totally drop a default verb. In normal language, the word ‘to do’ is used instead of the default verb.

I move car
I do car
I car
I drive a car .

Also note that $\mathcal{S}_2$ has a vocabulary, where verbs are more likely to be there than nouns. E. g., there is no atomic word for ‘reason’ but only for ‘cause’. Also, ‘meal’ does not exist. Only ‘to eat’. Other forms are often created by using the NULL particle.

5.12 Constructing Verbs

$\mathcal{S}_2$ has a lot of verb makers and modifiers. The language seems to have derived from states and things only. So actions and changes can be formed from states or things. For this, $\mathcal{S}_2$ has positive and negative forms of verbs modifiers:

The simple negation is te from ancient $\mathcal{S}_2$ ‘t’.

	positive	neg.	rev. neg.	double. neg.	Example
normal	le	tje	let	tjet	le tulu = to really be boilingly hot
durative	lw	tjw	lwt	tjwt	lw tulu = to boil
inchoative	la	tja	lat	tjat	la tulu = to become boiling
resultative	lu	tju	lut	tjut	lu tulu = to (make) boil = to cook

Many verbs are formed using these verbs. The negative forms negate the state, not the action, so lat tulu means ‘to become not boiling’. And tjat tulu: ‘not to become not boiling’. Many words using lut or lat use the prefix ‘de-’ in English (or ‘ent-’ in German).

FIXME: THINK: Possibly add another one for ‘iterative’ aspect (dt: streichen →streicheln). Or others..

Chapter 6

Adjectives

Adjectives are rather verbs. However, some things are typical for adjectives, i. e., verbs describing properties of things.

One thing typical for $\mathcal{S}_2$ is that it is unmarked whether an adjective is used selectatively or describingly:

Selection:	those cars that are red
Description:	cars, which, as you know, are red

FIXME: Have ways to clarify what is meant..

As mentioned before, the adjective either preceeds are follows the word it belongs to, depending on whether the predicate is controlled or not.

6.1 Comparative

There is no comparative as a special form in $\mathcal{S}_2$. Usually, the verb 'to exceed' is used to express comparisons. The construction 'A is stronger than B' translates to 'A's strength exceeds B's'. You would not say 'A's exceeds B's strength', because you want to stress that A is strong, not B.

A more precise translation is 'A, who is strong, exceeds B'. This means: A is the agent of 'exceed'. Furthermore, 'exceeds' is the head of the matrix clause, not of the sub-ordinate clause. This is important, because the reference particle REF will mark A, i. e., neither B nor 'strong'.

An example:

big A, exceed B.
big REF A, exceed B.
A is bigger than B
'(The) size (of) A exceeds (that of) B.'

A violent, exceed B.
A is more violent than B
A exceeds the violence of B.

It is interesting to see here that the assignment of A as an agent to 'violent' is overt in English: 'violent' is derived from a latin present *active* participle: 'violans' or the verb 'violare'.

good drink, A, exceed B.
A tastes better than B

It was thought about using 'to compare' as in Mandarin for this construction, but the problem is that it is ambiguous due to the nature of relative clauses. Imagine a sentence like the following in $\mathcal{S}_2$ (the structure is the same in Mandarin: 'A bǐ B hˇao.'):

*A good, compare B.
?A is (behaves) better than B.
?B is (behaves) better than A.

The problem is that neither A nor B are marked with a REF particle, so it is unclear whether A or B is exported into the matrix clause to be predicated good. Because the reference particle is considered more awkward for this construction than using the verb 'to exceed', this is how $\mathcal{S}_2$ does it now.

Using question words is straight-forward:

big WHICH car, exceed?
Which car is bigger?

In that sentence, the compared referent is not mentioned, but that's not problem. No pronoun is needed. A possible answer would be:

red car exceed
The red car is bigger.

good drink YN tea, or YN coffee, exceed?
good drink YN tea, YN coffee, exceed?
Which tastes better: coffee or tea?

or is often dropped in sequences combined with YN particles, since it is redundant there.

Do you find it strange that in this sentence, the patient is mentioned before the verb 'to be good to drink'? It isn't. The matrix clause *YN tea*$_x$*, YN coffee*$_x$*, exceed subordinate(*x*)* contains the patients x of the sub-ordinate clause *good drink* x. If you want to stress this, you might use *good drink REF he/she/it* as a sub-ordinate clause.

See the following sentence, where one of the patients is in the sub-ordinate clause:

good drink, tea, YN exceed, coffee?
Does tea taste better than coffee?

Of cause, an agent may be added:

you like drink, YN tea, YN coffee, exceed?
You one do you like better: coffee or tea?
'Is it coffee or tea that exceeds the other in how much you like to drink it?'

good drink YN tea exceed coffee?
Is it tea that tastes better than coffee?

6.2 Superlative

There is no superlative as a special form in $\mathcal{S}_2$. Instead, a system similar to Japanese is used: simply use an ordinal expression with the verb:

good one, drink tea.
Tea tastes best.

Other numbers are possible:

good two, taste beer.
Beer tastes second best.

large three, peter.
Peter is the third largest.

Chapter 7

Selected Words

7.1 Personal Pronouns

$\mathcal{S}_2$ distinguishes three persons: the speaker, the listener and others. By default, there is no distinction between inclusive and exclusive first person as in many languages. (Note that $\mathcal{S}_2$ also does not distinguish the number with pronouns as it is never distinguished).

The third person pronoun is used very seldom. Usually, a noun (usually only one short stem) from discourse is used instead. The third person pronoun usually refers to something in a large, even utterance/story-global discourse: the hero, the couple a story is told about, or, e.g. in the Bible translation, consistently to God or Jesus only.

Tyl-Sjok has means to express in- or exclusiveness of the first person, however, but suffixing 'all' or 'alone' to the first person pronoun.

7.2 Determiners

There are two determiners one of which is the only demonstrative in $\mathcal{S}_2$ meaning either 'this' or 'that'.

DET	this, that
WHICH	which
so	such

To be more precise with DET, you can use genitive constructions on it to clarify the meaning if necessary, e.g. 'that book' may be something like 'you DET book' or 'he DET book' or 'far DET book'. And 'this book' may be 'I DET book' or 'near DET book'.

If you think that only one demonstrative is imprecise, please note that modern German has almost the same level of imprecise demonstratives. In earlier times, 'dies' was 'this' and 'jenes' was 'that'. Nowadays, the normal definite article may be used for both (it is stressed more with this usage). Today, 'jenes' is old-fashioned and 'dies' is used less frequently than 'das hier'. If you ask 'This or that?' in German, it is usually rendered as 'Das oder das?' with the finger clarifying the meaning. (Of course, this paragraph is also valid for the two other genders in German).

The complex distinction some languages have by proximity to the speaker, listener, by visibility, discourse, etc., is not (yet) available in $\mathcal{S}_2$.

FIXME: Can $\mathcal{S}_2$ form complex demonstratives by genitive construction, which is judged to have the needed expressiveness??.

The words 'when', 'where', 'who', 'how' are rendered with WHICH. Accordingly, 'then', 'there',

'here', 'this/that person', 'this/that way' are rendered with the help of DET.

hurt	you	happen-at	WHICH	SKIP?
hurt	you	happen-at	WHICH?	

When did you hurt yourself?

hurt	you	be-at	WHICH	SKIP?
hurt	you	be-at	WHICH?	

When did you hurt yourself?

WHICH	SKIP	hurt	you?

Who hurt you?

you	hurt	use	WHICH	SKIP
you	hurt	use	WHICH	

How did you hurt yourself?

See Chapter 12.1.2 for comments on these sentences, which are often seen differently in colloquial language.

DET can be used together with a subsequent phrase (adjectival usage), or it can be used alone (pronomial usage).

'In such a way' may be translated using *use so*. It either modifies the verb directly or the whole phrase.

birth	please	use	so,	you,	happen-until	I.
birth	please	you,	use	so,	happen-until	I.

Your life as it has been is over.
'The manner that your birth used to please you has existed until now.'

7.2.1 Usage of DET

now; at this time	*(I, you, he, near, far) DET time*
then; at that time	*(I, you, he, near, far) DET time*
here	*(I, you, he, near, far) DET place*
there	*(I, you, he, near, far) DET place*

7.3 Qualifiers

All qualifiers can modify countable as well as uncountable objects. There is only one form. $\mathcal{S}_2$ has the following qualifiers.

all, each, both, any	*all*
some	*some*, *NEG all*

The qualifier 'no' is rendered using the negative particle *NEG*.

Other qualifiers may be composed as follows:

few, little	*small some*
a lot, many, much	*big some*
almost all	*near all*
...	

Quantifiers are full nouns and, therefore, follow the modified phrase according to the multiplicative principle used for 'three cups' ('cup two') and numbers like 'twenty' ('ten two'). A direct translation for, e.g., 'cup many' of would be: 'many entities that are cups (as a patient)'.

The NEG particle is a direct modifier, and, therefore, precedes the modified phrase.

7.4 Conjunctions

7.4.1 Co-Ordination

For co-ordination, there is only one conjunctive particle: the sequence particle SEQ, which, if not used with any additional words, may be translated as 'and', 'or', 'but', 'though', etc. depending on the context.

The word 'to add' is often used without SEQ (especially in numbers), and may seem to be a conjunction, but it is not.

SEQ's usage is purely syntactical: it is to link two constituents together that do not control each other. This section and Section 8.3 show examples.

Some conjunctions known from English are translated as follows:

A, SEQ add B
A and B

A, SEQ not alternative, B
A and surely B

A, SEQ (EMPH) truth B
A but B

A, SEQ alternative, B
A or B (underspecified: inclusive or exclusive)

alternative A, SEQ alternative, B
A or B (inclusive)

A, SEQ not add, B
A or B (exclusive)

Further note that the sequence particle may be dropped. If no additional modifier is given, this is likely only to happen for top-level phrase composition. Often, when a modifier is given and when the sequence is clear, it also happens in embedded structures (e. g. typically if the constituents are modified with a YN particle):

A add B
A and B

70 add 5
75

Also, phrases that could be linked with *cause* alone often use *SEQ kel* instead for stylistic reasons.

7.4.2 Sub-Ordination

Sub-ordination is done by verbs and direct embedding in $\mathcal{S}_2$. E. g., with the verb *cause*.

Examples
Rain cause I NEG come.
Because it rained, I did not come
'The rain causes/caused my non-coming.'

you arrive happens-when I fetch.
When you arive, I'll fetch you.
'My fetching you happens when (you) arrive.'
Note that 'happen-when is a verb in $\mathcal{S}_2$.

destroy world NEG cause surprise I
If the world goes down, I will not be surprised.
'The world being destroyed does not cause me to be surprised.'

This can be expressed without 'cause' as well. Then 'destroy world' is the agent of 'surprise'.

FIXME: Translate: 'but'. It could is actually be the same as 'and'..

7.5 Prepositions

There are no prepositions. Verbs are used instead.

To show how this works, here are some example applications.

7.5.1 Place

Use the Location, Sub-Position and Re-Postion Verbs. See Sections 5.5, 5.7 and 5.8.

7.5.2 Time

Use the Time, Sub-Position and Re-Postion Verbs. See Sections 5.6, 5.7 and 5.8.

7.5.3 Instrumental

For 'with, using, with the help of' use the verb 'to use':

I eat pizza use hand
I eat pizza with my hands.

I want eat use chop-sticks
I want to eat with chop-sticks.

Mandarin uses SVC for this, but the basics are the same: 'Wǒ xiǎng yòng kuāizi chī fàn'

FIXME: check tone of 'yong' and 'kuaizi'.

uses SVC.

FIXME: Translate: 'I would not be surprised about the world going down.': X surprises Y..

FIXME: Translate: 'Concerning/About today's lesson I have questions.'.

FIXME: Translate: 'Of all fish, I like salmon most.'.

FIXME: Translate: 'After dinner I will read a book.'.

FIXME: Translate: 'Learning by doing.' (to use?).

Chapter 8

Particles

The following sections will list different categories of particles: those that change the kind of a sentence (e. g. question particles), those that change the syntax structure of a sentence (e. g. relative clause particles), those that disambiguate the meaning, those that stress or modify the emphasis of the sentence and those that show the status of the sentence (e. g. whether it is an assumption or a proposition, etc.).

For expressing mode (indicative, conditional), tense (past, present, future, etc.), or aspects (perfective, durative, repetitive, etc.), no particles are needed, since normal auxiliary clause constructions can be used. See Chapter 5 for a discussion.

FIXME: Will there be a topic marker? Will there be a particle to make attributive vs. referential interpretation clear?.

8.1 Mood Changing Particles

YN: A yes-no question particle. Classifying this as a verb asking for the existence of its patient seems odd, since the verb would have a strange meaning. So it shall be analysed as a particle.

You drink YN coffee
Do you drink coffee?

As you can see, the particle immediately preceeds the item that is asked for ('coffee'). See the difference:

You YN drink coffee
Will you drink (the) coffee?
Do you *drink* coffee? (Or do you eat it?)

For a question with several (typically non-exclusive) alternatives, several YN particles may be used in one sentence. (Note that the $\mathcal{S}_2$ word for 'or' is under-specified wrt. whether it is inclusive or exclusive (as in English)).

You drink YN coffee or YN tea
Do you drink coffee or tea? (which one? both? none?)

In contrast to this:

You YN drink coffee or tea
Will you drink coffee or tea? (Do you drink any of them? Yes or no?)

NEG: Negation particle. This does *not reverse* the meaning (i. e. 'NEG good' is not the same as 'bad'), but simply states that the underlying phrase is not valid or does not exist.

I drink NEG coffee
I don't drink coffee.

As before, the particle immediately preceeds the item that is negated. Compare this to German, where the only possible translation of the above sentence is 'Ich trink keinen Kaffee.' ('I drink no coffee').

FIXME: Clarify how to reverse a meaning, if that is possible.

ASS: Assume with a slight doubt that the proposition is correct.

You drink ASS coffee
You do drink coffee, don't you?
== I assume you drink coffee (i. e., not tea), right?

In this sentence, 'coffee' was marked by ASS. Please see the difference:

You ASS drink coffee
You will drink (the) coffee, won't you?
You *drink* coffee, don't you? (You don't eat it, do you?)

To stress the second of the above interpretations, use a NEAR particle:

You ASS NEAR drink coffee
You *drink* coffee, don't you? (You don't eat it, do you?)

8.2 Category Changing Particles

8.2.1 Resultative

FIXME: Maybe this particle is not needed but can be expressed by a regular verb. Or by an aspect changing particle (compare English: 'I have got' denotes a predicate nowadays)..

The verb modifier particle RESULT marks the result of an action. This transforms active to stative verbs, or put differently, nouns denoting the result can be formed.

The RESULT particle is either as a patient to an active verb, or as a verb for a stative verb or noun. E. g.:

die	→*die RESULT*	to be dead, death
lay	→*lay RESULT*	to lie
one	→*RESULT one*	to unite, to agree (+ 'mind')

Note: compare the latin word 'unanimus'.

When used as a verb, note the slight difference between the causative particle *cause* and the RESULT particle:

one	→*our mind cause one*	We cause an agreement.
	→*our mind RESULT one*	We agree.

The causative particle stresses the control of the action, while the resultative particle stresses the result (control is expressed by syntax anyway).

FIXME: Find sentences where an English translation makes the difference absolutely clear..

8.2.2 Causative

FIXME: Maybe this particle is not needed but can be expressed by a regular verb: 'to make', 'to cause'..

The verb modifer particle CAUSE transforms a predicate into a verb describing the action that lead to that state. This particle transforms states into events.

red	→*CAUSE red*	to redden, get red

8.3 Syntax Changing Particles

This section lists particles that totally change the meaning of a sentence which would not be a possible interpretation without them.

REF: marks the word in the sub-ordinate clause that is referred to in the matrix clause. If it is missing, either the whole sentence (the verb, resp.), or the agent or an patient is used as previously described.

REF is called the *relative clause reference particle* or *reference particle*.

Note that this particle also makes clear which of the possible sentences is the relative clause.

FIXME: The following examples put strange in the wrong position as a sentence modifier..

The sentence

REF man read book strange.

means 'The man who reads a book is strange.' This particle is often used together with a START or END particle (see next section) if a default phrase boundary would be preferred at a different place without the REF particle. This helps the listener.

E. g. because the minimum attachment principle would suggest 'book' + 'strange' to attach first, the above sentence has a small garden path of one word: 'strange', after which the listener might expect the main clause to follow, until they realise that the matrix clause has already ended. The garden path can be prevented by saying:

REF man read book END strange.

Nevertheless, both sentences are perfectly fine.

The REF particle may be used before the verb to mark the whole phrase:

strange man read book REF.
It is strange that the man reads a book.

Of course, the verb may be marked:

man REF read book END strange.
It is strange how the man reads a book.
'The man's (way of) reading of the book is strange.'

Rarely, the verb may also be used as a verb in the matrix clause:

I man REF read book newspaper.
I read a newspaper, which the man does with the book.

FIXME: Should we allow this?? Is a brain capable of understanding this?? There are comparative auxiliary clauses that can be used for this. Use a sentence reference pronoun instead..

*FIXME: This construction is a bit strange, it should be *before* the sentence..*

In $\mathcal{S}_2$, a reference particle may not be applied more than once to a word. You might want to do this if you have an embedding depth of more than two, but it is explicitly disallowed due to problem in understanding. Use simpler structures instead. E. g., more sentences.

Note that this construction is rare. Usually, REF marks fully saturated structures only (although in the last example, it is in front of the verb instead of at the beginning of the sentence).

NULL: The NULL particle marks a non-filled position that is not filled by the context (so it is not an elliptic particle, no clitic, etc.). It always marks a fully saturated constituent.

E. g. NULL can be used to change the verb *go-to* into *destination* by filling its patient slot.

go-to NULL DET
This is the destination.

Or it forms 'builder' by attaching to the agent slot of 'to build':

rich person DET house NULL build
The builder of this house is a rich person.

NULL tends to be left out in $\mathcal{S}_2$ if the context makes the meaning clear.

A *REF SKIP* sequence is essentially the same as NULL. $\mathcal{S}_2$ has a NULL particle, because it is used much more often than a SKIP particle and should be short. NULL is used for forming new words a lot.

At the end of the following paragraph, it can be seen how a NULL particle is marked with a REF particle. This is allowed in $\mathcal{S}_2$, while *REF REF* sequences are considered too complicated.

SKIP: The SKIP particle syntactially fills a position in the sentence that will not be referred to, but must be filled to mention another position. See the difference in the following sentences:

love SKIP I
I love someone.

If must use this particle here, since there is no other way to skip the patient position of the verb. English uses the word 'someone' to skip the unmentioned position, but $\mathcal{S}_2$ has a special particle for that.

The following sentence shows the difference with the NULL particle.

love NULL I
the one whom I love

Here, the NULL particle marks the clear referent of the phrase. It marks that the phrase is used to describe someone unmentioned. This is totally different from SKIP.

Note that the SKIP particle may be used with determiners, too:

love WHICH SKIP you
Whom do you love?

You might expect the NULL particle here, but the NULL particle means something different. It would be an awkward sentence, the translation of which being complicated:

love WHICH NULL you
'You love the one who would be asked for in this sentence if it was a question.'

The following illustrates the usage of both particles on one sentence.

stupid love SKIP NULL.
People you are in love are stupid.

More particles might be used:

love happy love SKIP REF NULL exceed hate SKIP NULL I
I love those who are in love who are happier than those who hate.

SEQ: The SEQ particles is used for co-ordination of phrases. It is a binary particle that translates to 'and', 'or', 'but', etc., depending on context. The precise meaning may be made clear with additional sentence-initial verbs.

I drink coffee SEQ tea
I drink coffee and tea.
I drink coffee or tea.

you drink YN coffee SEQ YN tea
you drink YN coffee YN tea
Do you drink coffee and/or tea?

you YN like visit theater SEQ cinema
Do you like to go to the theater or cinema?

I like theater SEQ NEG cinema
I like theater NEG cinema
I like (to go to) the theater but not to the cinema.

8.4 Syntactic Disambiguation Particles

To disambiguate the construction of a sentence or to change the way of interpretation, the particles introduced in this section can be used. These particles can be view to do a *coarse* disambiguation.

START, END: mark the start and the end of a (sub-ordinate) clause. If the situation is clear, either one may be left out. The sub-ordinate clause then stretches to the boundary of the whole sentence (or as far as possible to keep the sentence grammatical).

For instance:

I read book END good
It is good that I read a/the book.

But

I read book good END

is still ambiguous and is even an odd construction, because the particle's focus is unlikely to span the whole sentence. The following is clear:

I read START book good
I read a good book.

It is possible to use two particles of the same kind:

I read book END good END strange
It is strange that it is good that I read a/the book.

FIXME: Give an example for START and END in the same sentence.

NEAR: marks that a construction attaches the minimal possible amount of words. This means this particle stresses the minimal attachment principle.

I read book NEAR good

Means 'I read a/the good book.' The particle is usable with some other particles, too, i. e. it is not restricted to be used with Rule 2.

FIXME: Should it be usable with a START or an END particle? This would result in weird constructions like 'I read book good NEAR END'. I propose not to allow this.

REF: this was listed already in the previous section. It is listed again here since it can be used to disambiguate the above sentence:

I read REF book good

means 'The book that I read is good'. Please note that it cannot be decided which one is the relative clause ('I read a book [that is good]' or 'I read books [that are good]' vs. 'The book [that I read] is good' or 'Books [that I read] are good') .

FIXME: Should we replace REF by a topic marker? It would not be the same kind of topic marker as in Japanese, because it would not be able to introduce own constituents. The only difference would be to be able to mark top-level structures. For what purpose ever. Maybe emphasis? But we have an emphatic particle and it may be a good idea to not mix up the reference particle and an emphatic particle, the one marking a semantic change, the other a pragmatic change..

8.5 Emphatic Particle

EMPH: puts emphasis on the phrase behind the particle.

I read EMPH book.
It is a book that I read.

This particle can be used with a NEAR article:

I read EMPH book good.
It is a good book that I read.
It is good that it is a book that I read. (less likely interpretation)

I read book EMPH good.
It is a *good* book that I read (i. e. not a bad one).
It is *good* that I read a book (less likely interpretation).

I read EMPH NEAR book good.
It is a good *book* that I read (i. e. not a newspaper).

This is better expressed using a START particle:

I read START EMPH book good.
It is a good book that I read.

It is of course possible to use an END particle as well:

I read EMPH book END good.
It is good that it is a book that I read.

Chapter 9

Numbers

In $\mathcal{S}_2$, counting is possible in decimal as well as in hexadecimal systems. Digit words exist for 0 to 16. These words for $2, \ldots, 16$ can function as exponent word, providing direct support for these bases.

9.1 History

This is chaotic and unrealistic and was just a means of producing the 17 number words that were needed. Skip it if you do not want to be bothered with fairy tails.

Numbers have developed in several steps in $\mathcal{S}_2$. The first numbers that were used where 1, 2 and 3. Their pronunciation has not changed until today.

In the early stages of the language, the numbers to ten have developed. They collapsed to single stems during the course of time since they became more and more used and had to be short and easy to pronounce. Powers of ten developed, too, in order to count large numbers.

Long after the decimal numbers had appeared, people started to also use binary, octal and hexadecimal numbers. During that time, the numbers up to sixteen developed and powers of sixteen were constructed the way powers of ten were constructed before.

In earlier times, numbers were composed in two ways.

- Using the normal genitive construction, a multiplier would *suffix* a number.
- Addition is expressed by a number *prefix*.

If a smaller number preceded a bigger one, addition was meant (2+3), otherwise multiplication (3·2).

These rules applied for simple numbers when no ambiguity problems occurred. All the modern single stem numbers developed from old forms derived with the above rules.

9.2 Digits

The numbers 0 to 16 are as follows. Reconstructed older forms are sometimes given. The oldest number are 1, 2 and 3. All other numbers are contructed from these in some way or another.

0	*t ling	(not 1)	→ *te?in →	*tjen*
1	*ling			*ling*
2	*kul			*kul*
3	*hen			*hen*
4	*kul kul	(2 · 2)	→ *kukul → *xukul → *xuhu →	*xun*
5	*kul hen	(2 + 3)	→ *kulen → *kwyn →	*kyng*
6	*hen kul	(3 · 2)	→ *?engkul → *?eNul →	*exul*
7	*ling hen kul	(1 + 6)	→ *lihexu	*ljehu*
8	*kul kul kul	(2· 2· 2)	→ *xjun kul → *xngkul → *xntu →	*xwt*
9	*hen hen	(3· 3)	→ *hehein→	*hang*
10	*kul hen kul	(5 · 2)	→ ? →	*kjox*
11	*ling kjox	(1 + 10)	→	*liko*
12	*?exul kul	(6 · 2)	→	*jol*
13	*hen kjox	(3 + 10)	→	*heko*
14	*ljehu kul	(7 · 2)	→	*ljoku*
15	*kulen hen	(5 · 3)	→	*kehen*
16	*xwt kul	(8 · 2)	→	*xuk*

During the development of the language, different phonetic rules existed. Open syllables where once allowed, these had to be closed later (with an or). Syllabic nasals once existed, so filling vowels had to be used later. Some shifts are still unclear, since the complete set of rules is unknown today.

The numbers 11 . . . 16 and 0 developed much later than 4 . . . 10, so these numbers use the reduced forms of 1 . . . 10 as a basis. The most important number to construct others was 2.

9.3 Summary: Digits

English	$\mathcal{S}_2$ Word		Digit hex	dec	oct	bin
0	*tjen*					
1	*ling*					
2	*kul*					
3	*hen*					
4	*xjun*					
5	*kyng*					
6	*exul*					
7	*ljehu*					
8	*xwt*					
9	*hang*					
10	*kjox*					
11	*liko*					
12	*jol*					
13	*heko*					
14	*ljoku*					
15	*kehen*					
16	*xuk*					
base	*like a digit*	*different radical, e. g.*				
power	*il*					
multiply	*kjwhe*		*NYI*			
add	*wng*					
opposite	*sje*		*NYI*			
andsoforth	*ly?a*					

For bases not divisible by 2, the first half of digits provides the additional number.

Base n	Digits $0, \ldots, n-1$
2	
3	
4	
5	
6	
7	
8	
…	

9.4 Powers

For forming larger numbers, the verb ‘to the power of’ is used. A ‘il’ B means ‘B to the power of A’. E. g.:

100	2 *il* 10		
300	2 *il* 10 3		

When writing numbers, the words *il* is usually omited, since the base character makes it clear where the number is. (The base has to be known to read a number correctly).

9.5 Composition

The system of additional left and multiplication right that was used in the old days of the language where not flexible enough for large numbers. Today, the verb ‘to add’ is used to compose numbers by addition. Multiplication is still performed by the normal process of multiplicative genitive.

12	10 *wng* 2		(not lit.: !)
32	10 3 *wng* 2		
432	2 *il* 10 4 *wng* 10 3 *wng* 2		

When writing numbers, the abbreviated form is used, which omits the word *wng*, and therefore sometimes needs to mention , and which only specifies the first exponent.

This system is quite compatible with number systems used in Western languages, as well as East Asian languages, as well as Hindi and others, since there are no words for powers of ten, but only ten – the exponent is counted. E. g., it is easier to translate ‘one million’ into $\mathcal{S}_2$ than into Chinese, where it is $100 \cdot 10000$. I. e., when numbers become large, computing exponent 1000-based systems into exponent 10000-based ones, and vice versa, is tidious, while transformation into the 10-based system should be easier. (Hindy uses a mixed 1000-based and 100-based system, which is also quite hard to translate into and from.)

9.6 Decimal

In the decimal system, the numbers 11 to 16 are sometimes taken from the hexadecimal system for shortcuts. However, they can be formed fully regularly, too.

eleven	10 *wng* 1		
twelve	10 *wng* 2		
…			
twenty	2 (*il*) 10		
thirty	3 (*il*) 10		
twohundred	2 10 2		
1999	3 10 *wng* 2 10 9 *wng* 10 9 *wng* 9		

10002	
20000	
340000	
300004	
347225	

9.7 Abbreviations

To abbreviate numbers, the digits and the first power can be used alone:

347225 = 5 (*il*) 10 3 4 7 2 2 5
= *kyng (il) kjox hen xjun ljehu kul kul kyng*
= .

The sequence need not be complete:

3425000 = 5 10 3 2 5
= *exul kjox hen xjun kul kyng*
= .

As you can see, people tend to omit *il*, too, so 2000 = *hen kjox kul* = .

This is also how numbers are written when using the number characters: abbreviated and without *il*, unless necessary.

9.8 Hexadecimal

The system is the same as for decimal numbers with the difference that in hexadecimal, all one-stem digits need to be used. There are no alternative forms.

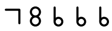
17	0x11	16 *wng* 1		
32	0x20	16 2		

In the same way, octal an binary numbers and other systems may be used up the a base of 16. As you can see, 11 == 0x11 when written with special characters. In most computer languages, the default is to use base 10, to switch to base 16, the character  is written in parens in front of the number (how parens look has to be decided). The same holds for other bases.

9.9 Number Symbols

To write numbers, usually the words are not written but instead, special digit characters are used. The mapping to symbols, however, is not one-to-one: it depends on the base to which a number is written.

For the base itself, $\mathcal{S}_2$ always uses the same number sign: 8. So 0x1000 (hexadecimal) and 1000 (decimal) and 01000 (octal) and 0b1000 (binary) are all written in the same way. When the base is to be specified...

999 = 

9.10 Negative Numbers, Negative Exponents

For negation the general opposition particle *sje* is used. It precedes the mantissa of a number. Example: '-2' = *sje kul* and '-20' = *kjox sje kul* = $-2 \cdot 10$.

Negative exponents are also possible: '1 half' = *sje ling kul* = 2^{-1}, '0.5' = *sje ling kjox kyng* = '$5 \cdot 10^{-1}$'. Note that *ling* is *not* redundant here, because *sje kjox kul* means 5^{-10} instead of $5 \cdot 10^{-1}$.

9.10.1 Floats

In abbreviated numbers, you can simply continue at exponent 0 to specify fractional digits. Example: '1.5' = *ling kyng*. '125.27' = *kul kjox ling kul kyng kul ljehu*.

Whenever it gets too long, you may use *wng* and resync the exponent: '125.27' = *kul kjox ling kul kyng wng sje ling kjox kul ljehu*.

9.10.2 Arbitrary Fractions

To specify a/b, simply say $b^{-1} \cdot a$. Examples: 'three quarters' = *sje ling xjun hen*.

Sometimes, you will need the otherwise rare word *kjwhe* in abbreviated numbers to make the multiplication explicit, because with fractions, bases get > 16: $42/25 = 1/25 \cdot 42 = 25^{-1} \cdot 42$ = *sje ling kjox kul kyng* ***kjwhe*** *kjox xjun kul*

9.10.3 Arbitrary Bases

When a base is a composite number, because it is > 16, the word *kjwhe* is used to mark the bases end just like with fractions. Also, the word *il* comes back into use in abbreviated numbers with larger bases. Example: '$17 \cdot 64^{15}$' = *kjox ling kyng il kjox exul xjun kjwhe kjox ling ljehu*.

Of course, the exponent may get negative, too: a^{-b}, e.g. 'fourth root of three' (FIXME: check English) = *sje xjun il hen*.

9.11 Units

A straightforward extension of bases are units, e. g., instead of 'ten' use 'second': *njati kul* means 'two seconds'.

Now, although *njati kjox kul* means 'twenty seconds', it sounds awkward and should better be paraphrased as 'a quarter minute and five' = *kul njati ling kyng*. Why is that?

Unit words are always the smallest *irregularly multiplied* unit of the kind of amount that is counted. E. g. the only root word for time units is 'seconds', since fractions of seconds are counted with decimal fractions and that is expressible by normal numeral means.

The next larger irregular unit is formed by using an exponent to the base unit, just like using an exponent for a numeral base. For convenience and to be in sync with normal number bases, the next higher unit must only be way by a factor of 16, because otherwise, there would be no digits to specify the unit in one word and we would get a clumsy mixture of units and bases.

Example: *kul njati* means 'fifteen seconds', i. e., a quarter of a minute. The full set of time units is:

(ling)	*njati*	second
kul	*njati*	quarter minute
hen	*njati*	minute
xjun	*njati*	quarter hour
kyng	*njati*	hour
exul	*njati*	half a day
ljehu	*njati*	day
xwt	*njati*	week
hang	*njati*	month
kjox	*njati*	year

With this, you can form 'twenty seconds' (= 'quarter minute and five') = *kul njati ling kyng* or 'half an hour' (= 'two quarter hours') = *xjun njati kul*.

$\mathcal{S}_2$ stops at years because higher units are formed in the decimal system again, i. e. in a regular numeral system. If we defined '11 second' to mean 'ten years', we would get quite strange words for 'a million years', since you'd have to add ten to the exponent of the number of years you mean. That's bad, so we establish another *level* of numbers above bases, i. e., units. So the largest unit of a given kind is always that after which a regular numeral counting continues, usually in decimal system, but not necessarily.

Some examples: 'year 2003' = *kjox njati hen kjox kul tjen tjen hen* and 'May' = *hang njati xjun*. Be careful: digits always count from zero, therefore, 'May' uses the digit 'four'.

In composite dates, we compose with *wng* just like in numbers: 'May 2003' = *kjox njati hen kjox kul tjen tjen hen wng hang njati xjun*.

To abbreviate, we may use the same system as for numbers, so 'May 2003' = *kjox njati hen kjox kul tjen tjen hen xjun*. Please note that the digit '4' after the numeral digits '2003' decrements the exponent of *njati* and does not denote a decimal fraction of a year. This is a rule: unit words with exponent > 1 do not have fractions. When you reach a fraction, you decrement the exponent of the unit word. That is one reason why units keep the maximum multiple of 16: this way, every digit following decrements the same exponent: that of the unit.

Example: 'May 16, 2003' = *kjox njati hen kjox kul tjen tjen hen kyng kul kul*. Literally: 'year 1000 2 0 0 3 [month] 4 [week] 2 [day] 2'. (Words in [brackets] are not explicit, but unambiguously implied).

Example: '4:17 pm' = *exul njati ling xjun ling kul*. Literally: 'half-a-day 1 [hour] 4 [quarter-hour] 1 [minute] 2'.

To handle non-metric units well, each base unit (like seconds) has a default base in which fractions are calculated. This base is lexicalised. For seconds, it is 10, since smaller units are counted in decimal fractions of 1: ’1.2 seconds’ = *njati ling kul*. In constrast, ‘inch’ has binary fractions: ‘3 inches and 1 half’ = *nuny hen ling*.

Together with the rule of hierarchy (unit – base – digit), you can stil change the base after the fraction so that you can say ‘3.2 inches’ = *nuny hen wng sje ling kjox kul*.

When long sequences of zeros occur or when numbers get too long, people will want to break up and restart synching the number. E. g. for ‘year 2003’, $\mathcal{S}_2$ permits to use *kjox njati hen kjox kul wng hen*. We define here that the ‘wng’ does not add seconds, but refers unambiguously to the numerical part only unless you repeat *njati*: ‘year 2000 and 3 seconds’ = *kjox njati hen kjox kul wng njati hen*.

Chapter 10

Sentences

FIXME: continue.

10.1 Coordination

There is only one way of phrase coordination: the SEQ particle. Its usage is divers since its only function is coordination. It has no other semantics but linking phrases that are on the same syntactic level. Translations may be 'and', 'or', 'but'. It is distinct from sub-ordination like 'if', 'because'.

Note that the border line between co- and subordinations are sometimes vage, especially when translating. E. g. 'although' in English is a subordination, but in $\mathcal{S}_2$, this word does not exist. So two sentences will be linked with something like 'but stil', which is a coordination.

Some patterns:

General :

A SEQ B = A and B; A or B (seldom); A but B, A although B, A and also B

The SEQ-construction expresses that A and B either

- do not modify each other
- modify one another.

And: **A SEQ als B** = A and B; A and also B

A SEQ B together = A together with B

A SEQ B NEG resist = A and not withstanding, B, too; = A and still B

All/Both: **A SEQ B all** = A and B all/both ...

A SEQ B SEQ C all = A and B and C all ...

But: **A SEQ B resist** = A but B

A resist SEQ B = A although B

true A SEQ B resist = A and, dispite of that, B; A but still B

Or: **A SEQ alternative B** = a or b, a or else b (in-/exclusiveness not specified)

A SEQ NEG also B = a or b (exclusive)

alternative A SEQ alternative B = a or b (inclusive)

Each other: **A SEQ B each-other** = A and B ... each other, e.g.:

with A SEQ B each-other = a has b and/or/but/although b has a

10.2 Subordination

Subordination was seen a lot of times. It is achieved by embedding the whole sub-ordinate clause where it is referred to in the matrix clause. Some verb are translated as conjunctions. E. g. *to cause* may conjure up words like 'if', 'then', 'because', etc.

10.3 Long Distance Dependencies

10.3.1 Reflexive Constructions

10.4 Gapping

FIXME: Should we allow gapping of entities that are non-equally referenced? E.g. patient in one phrase, agent in the other? Not sure about this..

Chapter 11

Derivation

11.1 Basic Meanings of Roots

$\mathcal{S}_2$ allows the usage of the same root without modification for the following meanings (exemplified with the root 'to build'). The second column shows how $\mathcal{S}_2$ clarifies the meaning of it is in question.

action	*REF build*	to build; the process of building
agent	*NULL build*	builder
patient	*build NULL*	building

$\mathcal{S}_2$ allows for clarification by the particles which are usually left out.

Chapter 12

Style

12.1 Written vs. Spoken

This section describes typical differences between written and spoken language.

12.1.1 Falling

In spoken language and modern written language, some particles and other modifiers that refer to something in a sub-ordinate clause have the strong tendency to fall into that sub-ordinate clause themselves.

Original sentence:

You try YN I drink tea?
Did you try the tea I am drinking?

Sentence with a fallen YN marker:

You try I drink YN tea?
Did you try the tea I am drinking?

The reason might be that in complex sentences, a REF marker can be omitted using this construction. (The original sentence above might also be read as 'Did you try whether I drink tea?' but this is an unlikely interpretation without a context, so the reference marker can be omitted here anyway).

Original sentence with a REF marker:

You try YN I drink REF tea?
Did you try the tea I am drinking?

Words like ASS, 'which', DET etc. behave the same way.

This phenomenon is not restricted to single words.

Shall you drink I like far DET tea
You should drink the tea over there that I like.

The original sentence would be:

Shall you drink far DET I try REF tea
You should drink the tea over there that I like.

12.1.2 Replacement of SKIP particle

It may be seen that the SKIP particle is replaced by a noun to clarify the meaning or to express other shades.

If it is more precise, it is regarded stylistic freedom to either use NULL or a more precise term. The following examples show this.

WHICH	person	hurt	you
WHICH	SKIP	hurt	you
WHICH	hurt	you	

Who hurt your?

WHICH	thing	hurt	you
WHICH	SKIP	hurt	you
WHICH	hurt	you	

What hurt your?

Some missing fillers cannot be replaced even in colloquial speech, because the fill-in would have to use SKIP itself to form a matching word. E. g. $\mathcal{S}_2$ does not have a word for 'reason' or '(the) cause', but uses *NULLcause* instead. This makes its usage awkward.

?WHICH	NULL	cause	cause	pale	you
WHICH	SKIP	cause	pale	you	
WHICH	cause	pale	you		

Why are you so pale?

Chapter 13

Writing

The main goal of $\mathcal{S}_2$ writing is to provide for fast reading. It was decided to have a writing system that is similar to Chinese. This basically means the following things.

- characters contain semantic information,
- each stems corresponds to one character.

However, Chinese writing is very hard to learn, while $\mathcal{S}_2$ writing should be easy to learn. It was thought about Korean writing which writes the pronunciation of syllables into a square, but it was decided that semantic information is important. Therefore, $\mathcal{S}_2$ writing contains both pronunciation for easy learning, and additional semantic information. This redundancy is assumed to be solved with the aid of computers, i. e., semantics are added to the writing by a computer from a large data base. So being able to read the semantics is not necessary for learning to read. It is hoped that the design of the semantic parts is easy enough to be managed by learners after a while of studying in order to get the profits of fast reading.

In short, the following design decisions where taken for $\mathcal{S}_2$ writing:

- Each stem is written into a square area. On the right, the pronunciation is written top-down. On the left, semantic hints are writing.
- The writing is written into four possible directions. The standard direction is line-wise left-to-right and right-to-left interlaced writing. The lines are usually written top-down. However, top-down and bottom-up writing is also possible, i. e., a tunnel can be enscripted with text on all four inner sides and it will be readable from a car that drives through that tunnel.

13.1 Pronunciation: Letters

The letters of $\mathcal{S}_2$ writing have already been introduced in Chapter 2.

In some cases, the semantics are left out (e. g. in polysyllabic foreign words). In that case, the pronunciation column are either centered or stretched inside the character, depending on the font properties.

13.2 Writing Semantic Hints

Semantic hints are stacked on the left side of a character. Between 0 and 3 parts can be used.

Semantic parts are designed to always use a third of a character's height. They will be centered if fewer that three parts are put into a character. This is in contrast to the pronunciation, which is squeezed and stretched to fit into the character.

13.2.1 Radicals

According to Chinese terminology, the semantical hints are called *radicals*. If a meaning is (loosely) tied to another radical, that radical is given in parentheses. The one in parenthesis will usually appear on top of the one that changes its meaning, but may occasionally be left out.

Please note that the radical system does not need to describe everything shade of the meaning since the pronunciation can (and must) be used to interpret a stem, too. Therefore, the tendency is to use few radicals. Three radicals are seldom.

The columns on the following pages are as follows:

- a sequence number,
- the $\mathcal{S}_2$ radical,
- name: how to specify in the typesetting system and what it is called in the lexicon,
- meanings, possible interpretations in different words,
- examples of (translations of) stems that contain the radical. Please note that the words that are given in the column before also tend to contain this radical.

Please also note that many radicals are composed of other radicals, so they usually do not have to be learned as atoms. Some frequent radicals used to compose others are 'hand', 'water', 'head', 'not', 'earth', 'self' etc.

Abstracts & Basics

	$\mathcal{S}_2$	Name	Meaning(s)	Example(s)
1		large	great, power word (number), old (age), much, many (number) tall (line), large (space), heavy (mass), long (time)	
2		huge	huge	
3		tiny	tiny	
4		small	small, young (age), few (number), . . . (*see* large)	
5		abstract	abstract, imaginary (opinion)	
6		good	good, lucky (feeling), evenly, even	
7		bad	bad, unlucky (feeling), unevenly, odd	
8		long	long, high, thin	
9		short	short, shallow (but not flat), thick	
10		flat	flat	
11		open	open	
12		closed	closed	
13		middle, centre	middle, center, central, medium	
14		presence	presence	
15		absent, absence	absent, absence, missing	
16		tight	tight, fixed	
17		loose	loose	
18		kind	kind, sort, category	

Nature in General

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
19		water	water, liquid, wet, humid	tee
20		fire	fire, warm, hot, dry	burn
21		earth	earth, dust, dirt, down	sand
22		air	air, wind, fresh	gas
23		sun	sun, bright (light), white (colour)	day, photon
24		moon	moon, dark (light), black (colour)	night
25		mountain	mountain, climax; high, up	

Analysis of Nature, Physics & Philosophy

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
26		mass	mass, weight, gravity (attraction)	gram
27		space, 3d	space, three-dimensional	liter
28		line, 2d	line, two-dimensional, one-dimensional (point)	meter
29		time	time	now
30		speed	speed	fast
31		loc, location	location	here
32		force	force	violent
33		energy	energy	electricity
34		self	self, oneself, for oneself	we
35		others	others, for others	you
36		intern	internal, inclusive	and, also
37		extern	external, exclusive	only, but
38		light	light	candle
39		colour	colour	red
40		distance	distance, part, stretch, passage (through), finity	liter, other units
41		point	point, dot	moment
42		drug	drug, halucinate	vision, foresee
43		truth	truth	judge
44		contrary	opposite, contrary	whereas, but
45		aggregate	aggregation	to take the power (huge, finite), flock, herd, group
46		infinite	infinite	water
47		sentient	sentient, conscious	human
48		symbol	symbol, representation, reference	(wedding) ring
49		relevance	relevance, key, leading	important
50		animate	animate	human, animal, robot
51		relation	relation	but, friend, comperative particle
52		interpret	interpretation	read, watch

Aspects, Mode & Tense

FIXME: Perhaps there will be special particles that can be used in a sentence for some of the following radicals.

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
53		change	change, movement, become, acceleration (speed)	
54		state	state, status, fixed, proposition (opinion)	
55		start	start, birth (age), enter	
56		end, stop	stop, death (age), exit	cancel
57		repeat	repetition, iteration, sequence	
58		reverse, back	reverse, back	
59		negate, not, no	negation, not	to refuse
60		cause	be the cause	by, because
61		purpose	purpose, final interpretation	for
62		induce	induce, make s.t. do s.t.	to force
63		impede	impede	to prevent
64		durative	continuity, durative	burn
65		complete	complete, perfective aspect	ready, final, solve
66		through, total	through, start & stop & complete, experience	
67		past	past, before, faded	
68		future	future, after	
69		now	present, now (note: 'present' is different)	

Validity, Status

FIXME: Perhaps there will be special particles that can be used in a sentence for some of the following radicals.

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
70		suggestion	suggestion	ask s.o. to do s.t.
71		imperative	imperative	
72		emphasis	emphasis	really, insist
73		focus	focus	concentrate, REFparticle
74		conditional	conditional	if, may
75		relative	relative	big
76		absolute	absolute	red
77		necessary	necessary	must
78		sufficient	sufficient	whenever, if
79		general	general	all
80		special	special	some, most
81		unique	unique, name	Henrik

Feelings, Personal Inclination & Belief

FIXME: Perhaps there will be special particles that can be used in a sentence for some of the following radicals.

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
82		wish	wish	
83		achieve	achieve (the goal of (being)...)	
84		opinion	opinion	think
85		feeling	feeling	love
86		assume	suppose, assume, think, possible	may, meet (on purpose)
87		assert	assert, propose	
88		accidental	accidental	random, meet (accidentally)
89		percept, perceive	percept	see
90		attraction	attraction	love, magnetism
91		trans	transcendence	God, Devil, believe
92		learn	learn	understand

Humans and Relations

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
93		person	person, men, people	
94		male	male, man	
95		female	female, women	
96		child	child, young	
97		family	family	brother
98		age	age	wise, old
99		glory	fame, glory	win
100		might, mighty	power, might, mighty	King

Living & Organisation

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
101		house	house, accomodation, residence	
102		work	work, helpful/useful	
103		duty	duty	work
104		leasure	leasure, free time, toy, game, art	paint
105		sleep	sleep, rest, recover	
106		weapon	weapon	
107		furniture	furniture	
108		clothes	things to wear	
109		container, around	container, around	
110		private	private	
111		public	public	
112		together	together, gather (change)	
113		separate	be separate, separate (change)	
114		control	control, reign, influence	King
115		hierarchy	hierarchy, network	Boss

Human Body

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
116		head, top, up	head	
117		feet, bottom, down	feet	
118		corpse, body	all kinds of body parts	
119		mouth	mouth	
120		eye, eyes	eyes, viewing (percept), light (sun)	
121		ear, ears	ears, hearing (percept), sound (air)	
122		nose	nose, smelling (percept), smell (air)	
123		skin	skin, touching/being touched (percept), leather	
124		arms	arms, reaching out	
125		legs	legs, move (→ change), walk	
126		belly	belly, guts, instinct	
127		hand, hands	hands, touching (percept)	
128		fur, hair	fur, hair, feather (air)	
129		ill	ill, illness	
130		sex	sex, reproduction	

Eating & Drinking

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
131		swallow	swallow, eat (corn), drink (water) breathe (air), throw up (back), ingest	
132		wine, alcohol	wine, alcohol	
133		corn, meal	corn, meal	
134		bread	bread	
135		fruit	fruit, vegetable	
136		sour	sour, acid	
137		salt, hurt	salt, salty, hurting, injuring	
138		sweet, pleasant, pleasant	sweet, sugar, pleasant, advantageous, profitable	
139		bitter, unpleasant	bitter, unpleasant, disadvantageous, unprofitable	

Money, Goods, Welth & Poverty

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
140		gold	gold, money	
141		metal	metal, silver, having a flaw	
142	+	count, amount	amount, degree, enumeration, counting (→number), measuring	
143		own	ownership	
144		material	material	

Creation, Craft & Tools

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
145		tool	tool, use, usage	hammer
146		put	put, attach, mount	
147	⚠	create	creation, start	build, cook
148		destroy	destruction, decompose, end	divide
149		artifact	artifact	
150		waste	waste, feces	

Animals, Plants, Etc.

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
151		animal	animal, microorganism (tiny), fish (water), bird (air)	
152		plant	plant, fungus (earth), fruit (water)	

Grammar & Language Structure

These are used for marking categories of words or other grammatical aspects.

	$\mathcal{S}_2$	Name	Meaning(s)	Examples(s)
153		comma	binary particle	
154		question	question	which, why, JN
155		number	number	1, 2, 100
156		abbrev, abbreviation	abbreviation	
157		onom, onomatopoeia,	onomatopoeia	buh!, beep
158		foreign	foreign word, split into several syllables	
159		particle	particle only, non-content word	

Please note that 'comma', i. e. that thing that usually separates two (auxiliary) sentences, is meant quite general in $\mathcal{S}_2$ since virtually all saturated phrases can be analysed as sentences. Accordingly, when a particle puts together two obvious, single stem nouns (like the word 'and' in 'tea and coffee'), the particle is marked with this radical. So a better name is 'binary particle'. But the radical name 'binary' was reserved. All clausal conjunctions (conjunctive particles) have this radical, so the name 'comma' has some right to exist.

13.3 Typing

When using LaTeX, $\mathcal{S}_2$ words are put into a macro called `\circum`. This will be parsed by the $\mathcal{S}_2$ preprocessor to insert the necessary characters.

Characters are written in Roman transcription. Characters are separated by spaces or dashes. Spaces separate words, dashes separate syllables of polysyllabic foreign words that have to be split into several characters.

The computer will automatically add semantic information from the pronunciation alone if possible. Should there be ambiguities (e. g. for the number 10 which may either be a digit or a power word), a radical name (from the list above) that is unique to one of the ambiguous words shall be added after a *dot*. To state that a radical does not occur, a dash (meaning minus) may be prefixed.

E. g. `\circum{{kjox.-count}}` generates while `\circum{{kjox.count}}` generates . If there are two stems `a<b.c>` and `a<c.b>`, then a constraint selects the one that is found first when checking the constraints from left to right, i. e., `a.b` selects `a<b.c>`.

If the author of a document wants to specify the radicals all by themself, *pointed brackets* may be

entry	→	`'('` *stem* *radical-list* <radical-name>? <description> `')'`
	|	`'('` *stem-list* *radical-list* <description> `')'`
stem-list	→	`'('` *stem** `')'`
radical-list	→	`'('` <radical>* `')'`
stem	→	<phonstem> *stem-selection*? *radical-modification**
stem-selection	→	`'.'` `'-'`? <radical>
radical-modification	→	`'-'` <radical>
	|	`'-+'` <radical> `'.'` <radical>
	|	`'+'` <radical>
	|	`'++'` <radical>
	|	`'<'` <radical> `'>'`
	|	`'<'` <radical> `'.'` <radical> `'>'`
	|	`'<'` <radical> `'.'` <radical> `'.'` <radical> `'>'`

Where

<**phonstem**> is the Roman transcription of a pronouncible stem that is maximally bi-syllabic

<**radical**> is a defined radical name

<**radical-name**> is a <phonstem> and a valid name for a yet undefined radical

Figure 13.1: BNF-grammar of $\mathcal{S}_2$ words in the lexicon and LaTeX

used to specify 0–3 radicals separated by dots.

Furthermore, radicals may be added and removed using the operators − for removal, + for addition on top, ++ for addition on the bottom and `-+` for replacement of a radical by another one, where the two are separated by a dot. The full grammar specification for the character composition is given in Figure 13.1.

FIXME: write an Emacs mode that does the selection (`kjox.-c` should be enough to be expanded to `kjox<number>`).

The typeset preprocessor recognises non-words like single consonants or vowels and typesets them accordingly. E. g. `\circum{{ei}}` will appear as . In the same way, pure semantics are recognised: `\circum{{<np>}}` appears as

FIXME: continue.

FIXME: Changing $\mathcal{S}_2$ font properties will be provided in a later version.

13.4 Fonts

$\mathcal{S}_2$ is typeset with several font styles. The main distinctions are as follows.

- Round or Square: this affects the fricatives and radicals and all typographic items that have edges that can be made round.

  Additionally, the lines themselves can be rounded or square at their ends.

- Serifs: fricatives can have serifs in the form of a horizontal line. This improves readability. Serifs can be missing, or use thinner lines, or use normal lines.

- Bold: the lines characters are drawn with are thicker.

- Script: hand-written script fonts look less even than non-script printed fonts.
  FIXME: The script has to be designed.

There are no italicized fonts.

Chapter 14

Unsorted Examples

14.1 Examples

E:	That's the red car that I destroyed.
$\mathcal{S}_2$:	DET (START) I destroy red (REF) car.
$\mathcal{S}_2$:	I destroy red DET car.
E:	I repair the red car.
$\mathcal{S}_2$:	I repair red car. 'red car' may be used as 'a/the red car' or as 'the car is red' in the matrix clause. This can be disambiguated with a particle, but in this clause, it is clear.
E:	I repair the exploding car.
$\mathcal{S}_2$:	I repair explode car. 'explode car' is interpreted as 'the car that explodes'. This happens due to the valence of the verb 'repair'. Also note that for 'explode', 'car' is the patient.
E:	I think the car explodes.
$\mathcal{S}_2$:	I think explode car. 'car explode' is interpreted as 'the car explodes' because of the valence of the verb 'think'.
E:	I repair the destroyed car.
$\mathcal{S}_2$:	I repair destroy (REF) car. In constrast to the previous sentencse, destroyed is passive, so the phrase 'destroy car' cannot be used as a describing substitute of 'car'. For 'destroy', 'car' is the patient, not the agent. Because there is no agent, the clause 'destroy car' cannot reduce to a described agent as in 'red car'.
E:	That's the red car that was stolen.
$\mathcal{S}_2$:	Red and steal DET car. The two phrases 'red' and 'steal' are conjoined by 'and'. The phrase 'steal' is a short form for 'person steal', which lacks an agent and may be interpreted as something like passive voice.
E:	I found the red car that was stolen by your mother.
$\mathcal{S}_2$:	I find red and you mother steal REF car.

14.2 Ambiguity between Saturation and Genitive

- good blue book
  It is good that the book is blue.
  The blue book is good.
  The blue of the book is good.

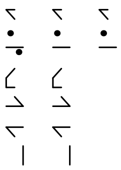
You may use particles (cf. Section 8.4) to clarify if the situation has no context to for disambiguation.

Chapter 15

Tests

15.1 Parser Test

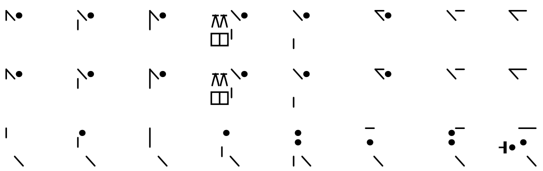
The lines must consist of equal characters.



15.2 Font Test

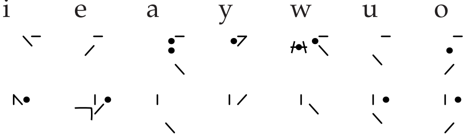
(C)V:

t s n k x ? h l



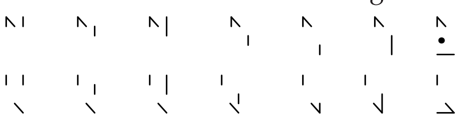
C(V):

i e a y w u o ei eo ui ou



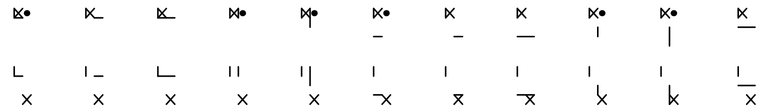
CV(C):

t s n k x ng l



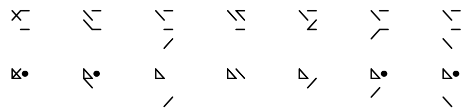
CV(C)V:

t s ts n nt k x kx ng ngk l



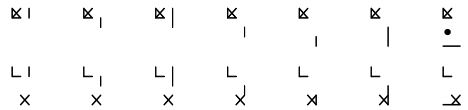
CVC(V):

i e a y w u o

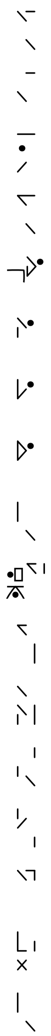


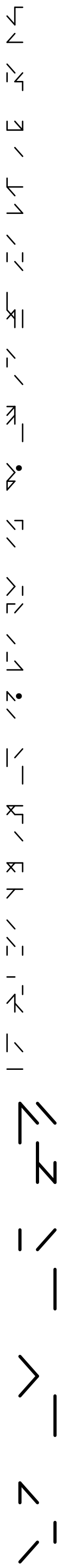
CVCV(C):

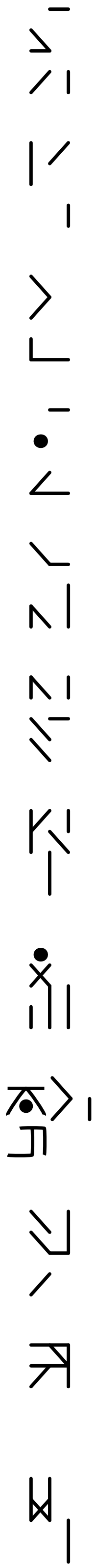
t s n k x ng l

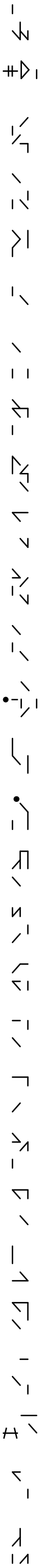


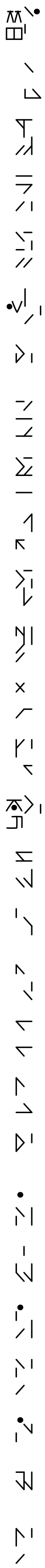
15.3 Random Syllables

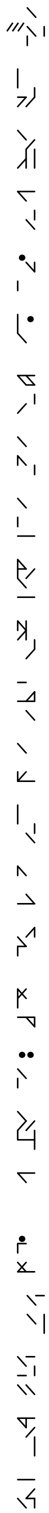


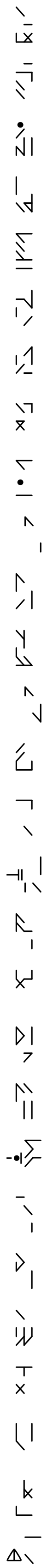










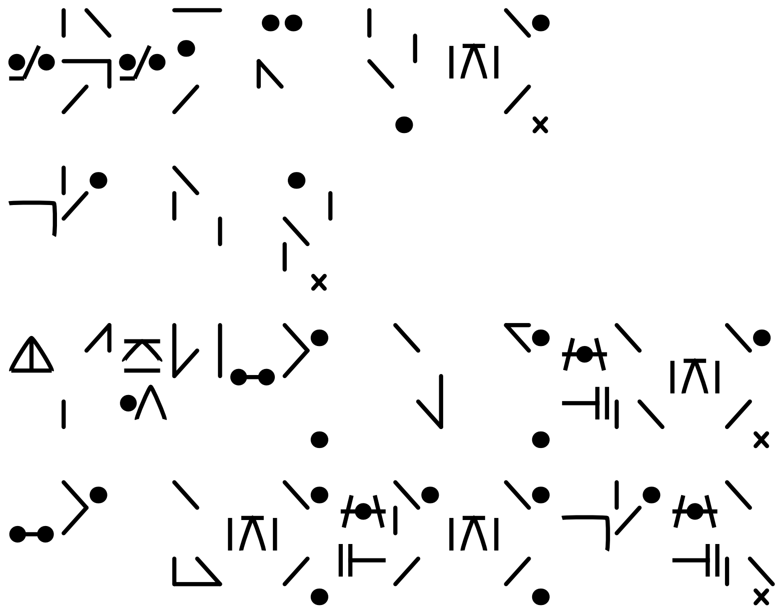


Chapter 16

Sample Texts

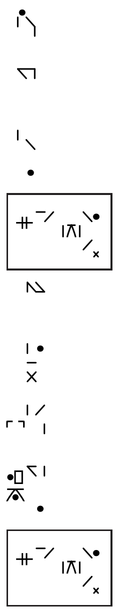
16.1 Locutus

I am Locutus of Borg. Resistance is futile. Your life as it has been is over. From this time forward you will service us.



Note: *sjo jo te xja* means 'from now until ever' (literally: 'starting now not ending').

16.2 Documentation



16.3 The North Wind and the Sun

16.3.1 British: The North Wind and the Sun

The North Wind and the Sun were disputing which of them was stronger, when a traveller came along wrapped in a warm cloak. They agreed that the one who first succeeded in making the traveller take his cloak off should be considered stronger than the other.

Then the North Wind blew as hard as he could, but the more he blew, the more closely did the traveller fold his cloak around him; and at last the North Wind gave up the attempt.

Then the Sun shone out warmly, and immediately the traveller took off his cloak. And so the North Wind was obliged to confess that the Sun was the stronger of the two.

16.3.2 U.S.: The North Wind and the Sun

The North Wind and the Sun were arguing one day about which of them was stronger, when a traveler came along wrapped up in an overcoat. They agreed that the one who could make the traveler take his coat off would be considered stronger than the other one.

Then the North Wind blew as hard as he could, but the harder he blew, the tighter the traveler wrapped his coat around him; and at last the North Wind gave up trying.

Then the Sun began to shine hot, and right away the traveler took his coat off. And so the North Wind had to admit that the Sun was stronger than he was.

16.3.3 German: Nordwind und Sonne

Einst stritten sich Nordwind und Sonne, wer von ihnen beiden wohl der stärkere wäre, als ein Wanderer, der in einen warmen Mantel gehüllt war, des Weges daherspazierte. Sie kamen überein, daß derjenige der beiden als stärker gelten sollte, der den Wanderer dazu brächte, seinen Mantel auszuziehen.

Der Nordwind begann, so stark er konnte zu wehen. Doch je mehr er wehte, desto fester hüllte sich der Wanderer in seinen Mantel und so mußte der Nordwind schließlich aufgeben.

Nun begann die Sonne zu scheinen und es wurde warm, so daß der Wanderer sofort seinen Mantel auszog. Da mußte der Nordwind zugeben, daß sie Sonne stärker war als er.

16.3.4 Icelandic: Nord. h.anvindurinn og sólin

Einu sinni deildu nord. h.anvindurinn og sólin um, kvort þeirra væri sterkara. Þau sáu þá mann í hlýrri kápu á ferd. h. á veginum. Þeim kom þá saman um, ad. h. þad. h. þeirra skyldi teljast sterkara sem gæti neytt ferd. h.amanninn til þess ad. h. fara úr kápunni.

Nord. h.anvindurinn tók þá til ad. h. blása af öllum mætti, en því meira sem hann blés, því þéttara vafd. h.i ferd. h.amad. h.urinn kápunni ad. h. sér; og ad. h. lokum gafst nord. h.anvindurinn upp.

Svo fór sólin ad. h. skína og þad. h. vard. h. hlýtt. Þá fór ferd. h.amad. h.urinn undir eins úr kápunni. Nord. h.anvindurinn vard. h. þá ad. h. kannast vid. h. ad. h. sólin væri sterkari en hann.

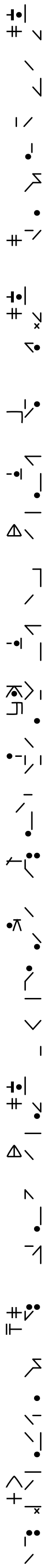
16.3.5 $\mathcal{S}_2$: Hwk Se Xok, U Set

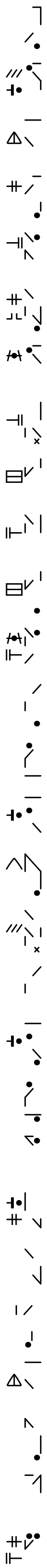
Hwk se xok, u set, te ling jes, hw hing sin, at ja tuk, hjung, lel, hw i lu, tax kjo njwng yn kju tyx, y i nax jang tyx, hesy, y nax. I te ling, lu hon ling jes, kjok heng, su ja, kel jyx nax, lu ting, yn se hesy, hjung, lel.

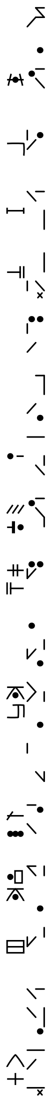
So kel, hwk se xok, sin hwk jang hjung tuk. Seng, i lu, la hjung, hwk, kel hw kut tuk, jyx nax, sys net kjo, yn kju tyx. So hon, hwk lu hex, kju kjang, hw xan.

Set sin set, sjo ky, kel la njwng, xjuk. Ky la, kel, i nax jang tyx, lu ting, yn se hesy, hw te hing xan. So hon, lak hwk se xok, jes, tax u it, set hjung, lel.

In $\mathcal{S}_2$ font:





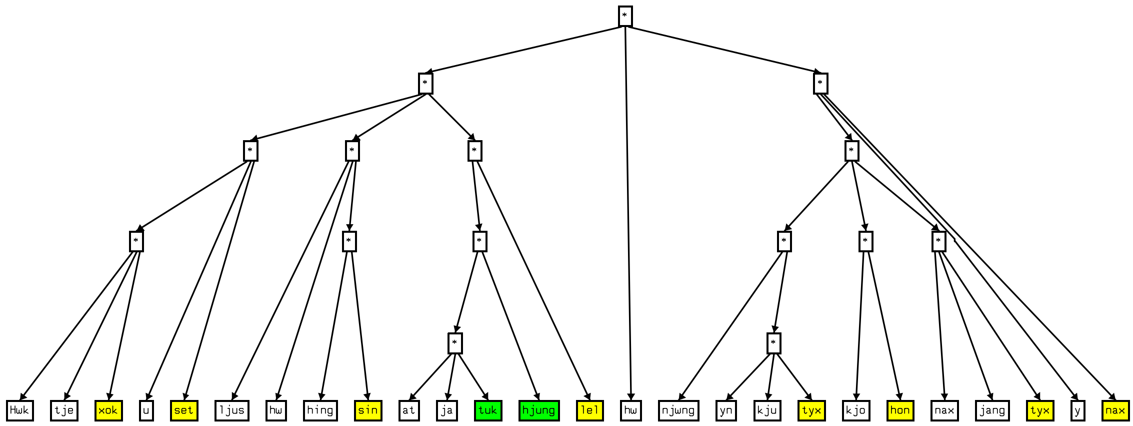


Word by Word

FIXME: The translation has changed. Change this accordingly..

Implicit words that are not mentioned in the text, but which usually belong to the phrase, are given in parentheses. Bracketed groups mark sub-structures.

Sentence 1 [[[Hwk se **xok**] u **set**] [ljus hw [hing **sin**]] [[[at ja *tuk*] *hjung*] **lel**]] hw [[[njwng [yn kju **tyx**]] [kjo **hon**] [nax jang **tyx**]] y **nax**].



Wind come-from north and sun [dispute happen long ago] [who of (the) two](’s) strength exceed (the other’s), when [warm jacket-to-feet cover (he who)-move-using-feet] be-on (where) move(ment takes place).

Long ago, the North Wind and the Sun disputed about who of them was the stronger, when a pedestrian covered with a warm cloak was on the road.

Note: $\mathcal{S}_2$ is embedding; therefore, ‘njwng yn kju tyx kjo hon nax jang tyx’ is translated as a relative clause, where in $\mathcal{S}_2$, the whole phrase is simply used in the matrix clause where ‘nax jang tyx’ is referenced. Because it is clear in this sentence, no reference particle (‘su’) needs to be used.

Sentence 2 [[[I *ljus*] **jes**] [hon **ling**]] u [[kjok **heng**] [[[[su **ja**] kel [[jyx **nax**] [tun se *hesy*] *yn*]] *hjung*] **lel**]].

[They who dispute]’s minds result in one, and (it) shall-be correct, (that) [who cause (the) move-person (to) cause (to) not wear (the) jacket](’s) strength exceed (the other’s).

The disputers agreed and it should be considered correct, that the one who causes the pedestrian to put off the jacket is the stronger.

Sentence 3 [So **kel**] [[[hwk se **xok**] sin **hwk**] [jang hjung **tuk**]].

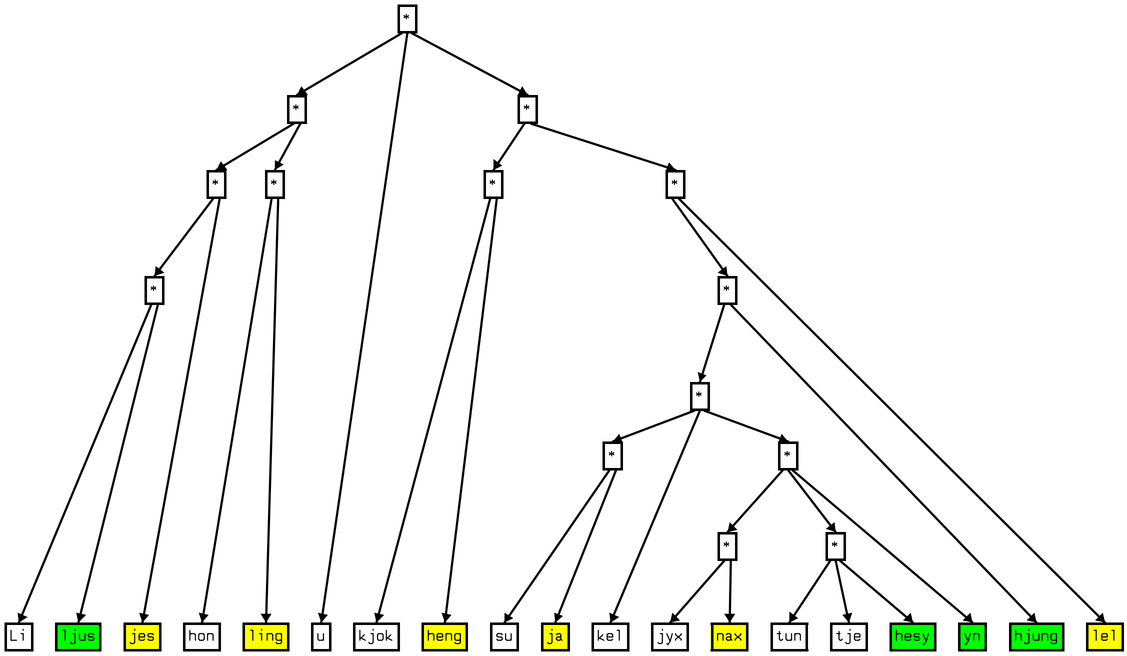
So this cause (that the) wind from north begin (to) blow use all strength.

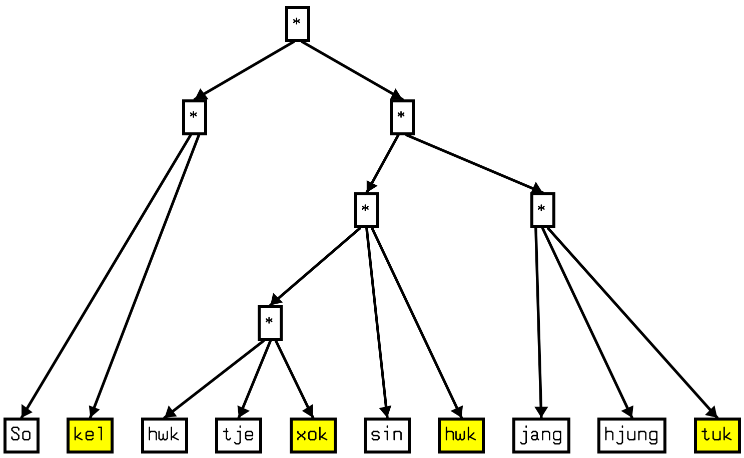
So the North Wind started to blow with all this strength.

Sentence 4 [Kjaxu **seng**] [[lit [hjung **hwk**]] [kel [hw kut **tuk**]] [[jyx **nax**] [sys [net **kjo**]] [yn kju **tyx**]]].

Yes true(ly), (he, the Northwind’s) (en)large(ment) (of the) strength (of the) wind cause (for) every attempt (that the) move-person pull good close (the) jacket-to-feet.

But everytime he blow stronger, the pedestrian pulled tight his cloak.





Sentence 5 [So **hon**] [[hwk [hex kju **kjang**]] hw **xan**].

So (this) result (in that the) wind put go-to down at (the) end.

And so, finally, the wind gave up.

Sentence 6 [Set sjo **ky**] u [kel [[xil *njwng*] **xjuk**]].

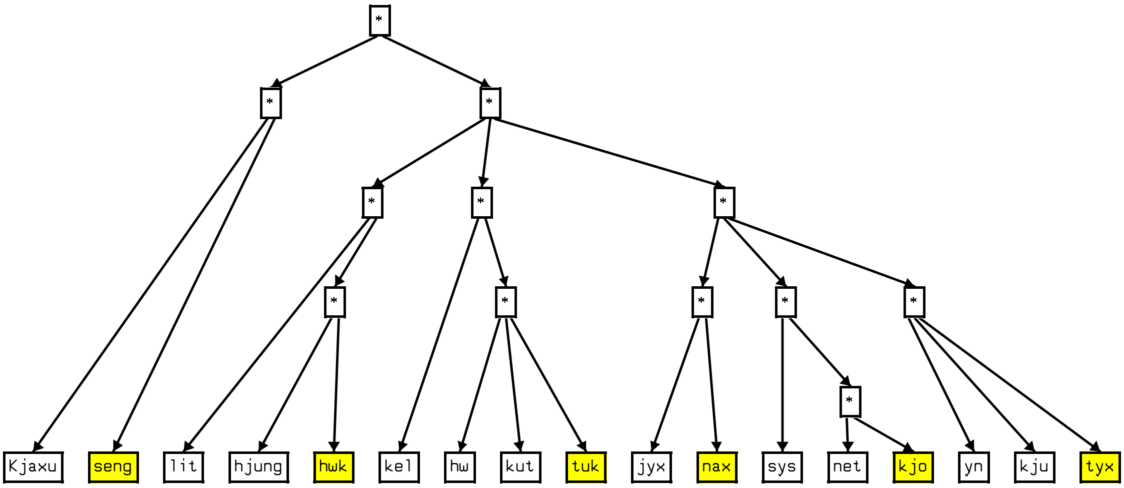
(the) sun shine start-when that (time) and (it) cause very warm air.

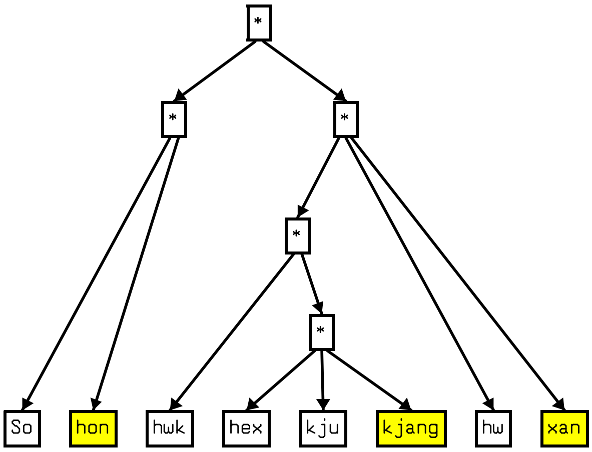
Starting then, the sun shone so that the the air became very warm.

Sentence 7 [So **kel**] [[[l nax [jang **tyx**]] [kel te *tot*] **yn**] hw [te [hing **xan**]]].

So (this) cause he-who-move-use-feet cause-not-wear jacket happen not long after.

So after a shortly while, the pedestrian took off his jacket.

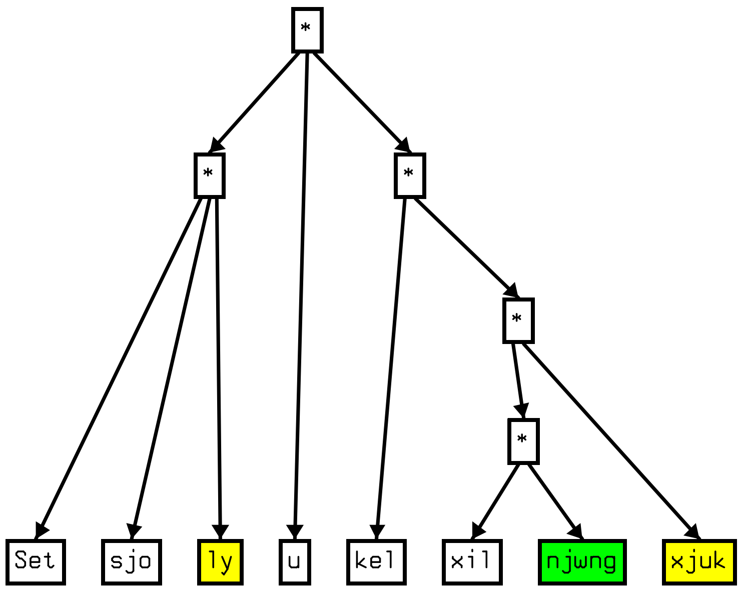




Sentence 8 [U [so **hon**]] [lak [[[hwk se *xok*] **jes**] [tax u **it**] [[set *hjung*] **lel**]]].

And so result, (that by) force, (the) North Wind('s) mind perceive and say, (that the) sun('s) strength exceed (his).

And so, the North Wind was forced to admit that the sun was stronger than him.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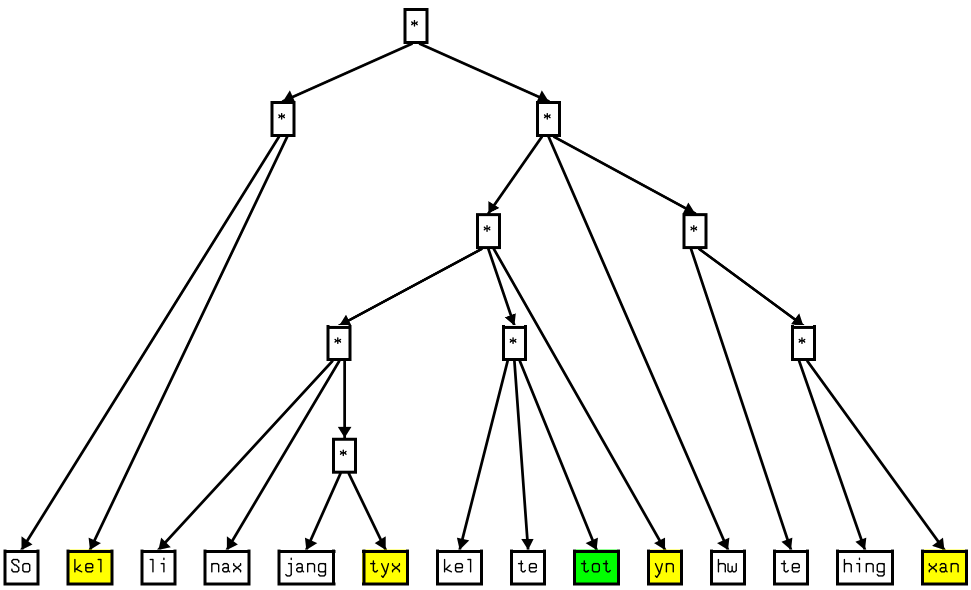
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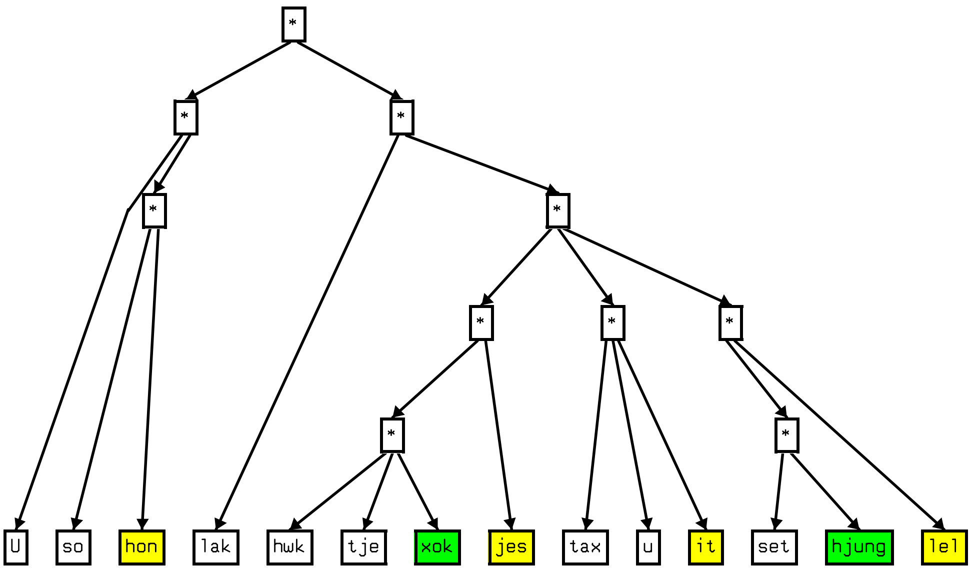
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Chapter 17

Lexicon

_x_ xus but _X_

ak<water> water [n]; cold water [n] <cf. ^kik>

at<question.special> WHICH, which?; {to use} how?; {Time} when?; {Loc} where?; [unary p: p=determined] <cf. ^ly>

at ja tuk who of the two

en<presence> near [v: s] <often used for modification; cf. ^ong>

en ja he; she; it; etc. but surely the one that was mentioned just before

en kis ‘three parts’: one third [n: s=patient]

en tuk almost all [n: g]

eti<relation> equal [n: s]

exul<number> digit: 6, six <cf. ^ljehu>

exul il njati half a day

exul njati sixth second; half a day

ha<question.truth> YN: yes-no question particle <see grammar>

hal<huge.abstract> extreme; very, extremyly [n: s=patient]

hal lit huge [n: s]

hal luk tiny [n: s]

han<control> to control (dt: lenken); <often used to mark patient of composite unsaturated> [n: g=controller, s=controlled] <cf. ^ul>

han<foreign> Mandarin Chinese

hang<number> digit: 9, nine <cf. ^kjox>

hang il njati month

hang njati ninth second; month

hangi<together.relation> each other [n: g=the set of entities] <cf. ^tuk>

hangi kul each other in pairs of two

heko<number> hexadecimal digit: 0xd: thirteen <cf. ^ljoku>

hen<number> digit: 3, three <cf. ^xjun>

hen il njati minute.

hen njati third second; minute

hesy<container> around [n: g]

hex<location.tight> be put, lie (be laid), be set [n: s=patient] <where?: use locative verb>

hi<nc> more [n: s=of which there is more], plus [n: s1=to what is added, s2=what is added]

hil<good> (good) luck [n]

hing<long> long [n: s] {for both location and time}

hjotul<fruit> bean; pea; lentil

hjotul kik coffee

hjung<might.mass> power, strength, strong [n: g=the one who is strong/has the power] <the ‘mass’ radical, because it is physical>

hjyx<waste> waste [n]; to be wasted, to be wasted [n: s=the thing being wasted]

hon<complete> (to) result (in) [n: s1=result, s2=patient]; (the) result [n: g=verb]; <cf. ˆkel>

hon i (the) result [n]

hong<work> help [n], to help [n]

huxu<end.animate> death [n] {phon.: ‘bad’}

hw<time.point> happen-when [n: g=event (the congregation), s=time (the selected feature of time of the congregation)] <followed by ˆsys, it markes not a point in time, but a duration. Cf. ˆxja, ˆy>

(hw) (i) kis ‘a part of time’: a while [n] <ˆhw and ˆi are often dropped, because the phrase occurs as a patient of a time verb anyway>

(hw) (i) tik ‘a point of time’: moment [n]

hw i time [n]

hw jo hing sin happened long before now, once upon a time [n: g=event]

hw kut tuk happend every time ones tries [n: g=event]

hw ky happen that moment, then [n: g=event]

hw sin happend at the beginning; initially [n: g=event]

hw sys _x_ to last for _X_ (amount of time) [n: g=event, s=amount of time]

hw sys kis to last for a while [n: g=event]

hw te hi X does not happen anymore [p: n=that what does not happen anymore]

hw xan happend at the end; finally [n: g=event]

hwk<air.change> wind [n], to blow

hwk se xok North Wind [n]

hyko<nc> be tired [n]

hys<nc> nose [n]

hyto<nc> above [n: g]

hywng<sex> <V!> sex [n], to fuck [n: g,s]; fucking, bloody {interjunction} [unary p] <note: this interjunction may be used to modify any phrase in the utterance> <phon: onom.>

hywng (le) je <V!> fuck you!; <lit: be fucked> <V!> piss off! {EMPH}

i<open.focus> NULL: unmentioned reference marker <see grammar>

i kel reason, cause

i lu agent; pronoun: the one who does something (in one of the previous sentences or even in this sentence (then it is a reflexive pronoun)) [n]

i nax jang tyx pedestrian, wanderer {'i' is dropped if clear from context}

il<large.repeat.aggregate> to take the power of [n: g=exponent (the initiator/degree), s=base (the patient)]

ing<foreign> lis<> English (for the language, add 'sjok')

it<mouth.sentient> word <the idiomatic one, not the syntax one> [n], speak, say, to tell, the talk, to talk [n: g=agent, s=language/topic] <phon: from *'jit': j- ˜ human, cf. ˆjyx; ˆsjok>

it yang tyk to write [n]

ja<others> he; she; it; him; her; they; them (3. person pronoun); {Loc} there <sometimes followed by DET{} (+ 'place') for clarity> {phon: j- ˜ human (but not exclusively usable for humans), ja- ˜ unspecified whether jan, jas or jat.}, <seldom used. Usually, real nouns from the context are used instead. Usually not used to refer to something in the last sentence, but in a really large scope of discourse, e.g. the hero of a story; cf. ˆjo, ˆje; ˆlu i, ˆi lu>

jal<child> old person <cf. ˆjan, ˆjas>

jan<male> man [n]; male [n: s=the modified] <cf. ˆjas, ˆjat>

jan jat boy

jan jul father

jan jul jul grandpa

jan jut son

jan jux brother

jang<tool> to use, with [n: g=user/action, s=instrument]; <for possessive or partitive 'with', cf. ˆking; cf. 'to serve': ˆxjal> {phon: j- ˜ human}

jang i manner [n]

jas<female> woman [n]; female [n: s=the modified] <cf. ˆjan, ˆjat>

jas jat girl

jas jul mother

jas jul jul grandma

jas jut daugher

jas jux sister

jat<child> child <cf. ˆjan, ˆjas>

jax<family> husband; wife [n] <cf. ˆjan, ˆjas>

je<distance> you (2. person pronoun) {Loc} there <sometimes followed by DET{} (+ 'place') for clarity> {phon: j- ˜ human (but not exclusively usable for humans), -e- ˜ away from throat -> distant from me} <cf. ˆjo, ˆja>

jes<sentient.interpret> spirit, ghost, mind, intelligence [n]; to think [n: g: thinker, s:topic]; {phon: j- ˜ human, cf. ˆjyx; ˆjyku}

jet<sentient.attraction> love [n]; to love [n: s1=source -> s2=experiencer] {phon: j- ˜ human; cf. ˆjyx}

jetys<nc> cherry [n]

jo<self> I; we; me; us (1. person pronoun, in-/exclusiveness unspecified); {Time} now <sometimes followed by DET{} (+ 'time') for clarity>; {Loc} here <sometimes followed by DET{} (+ 'place') for clarity> {phon: j- ~ human (but not exclusively usable by humans), -o- ~ near throat -> close/inside/equal to me} <cf. ^je, ^ja>

jo ky this; {Loc} here; {Time} now

jol<number> hexadecimal digit: 0xc: twelve <cf. ^heko>

jul<age.family> parent <cf. ^jyx, ^jat, ^jux>

jul jan jul paternal grandparent

jul jas jul maternal grandparent

jul jul grandparent

jul jux uncle; aunt

jun<body> body [n]

jun hjyx excrements [n]

juna<family> family [n]

jut<child.family> son; daughter <cf. ^jul>

jux<family> brother; sister <cf. ^jut>

jyku<sentient.feeling> heart, spirit {phon: j- ~ human, cf. ^jyx; ^jes}

jyx<human> person; someone, the one <cf. ^jan, ^jas, ^jes>

jyx nax 'moving person': traveller, pedestrian, ...

kaxi<nc> plant [n]

kehen<number> hexadecimal digit: 0xf: fifteen <cf. ^xuk>

kel<cause> cause [n], because; make s.o. do s.t., make s.t. happen [n: g=controller, s=event] <cf. ˆlu>

kel i consequence

kel xyt to make to become born [n: g=agent, s=patient]

keng<relation.symbol> like, as, equal to (wrt. properties, not the same entity) <mystically or figuratively> [n: s2=patient/property, s2=experiencer] OR [n: g=controller; s=patien/property] <cf. ˆking>

keng set right, correct [n: g XOR s=patient]; {Loc} right [n: g=patient]

keng xok wrong, false [n: g XOR s=patient]; {Loc} left [n: g=patient]

ki<together.aggregate> together [n: g=group]; amount [n: s=of what]

ki njolu 'the collected knowledge' = documentation [n]; be documented [n: s=patient]

kik<water.fire> warm/hot/boiled water [n] <cf. ˆak, ˆtulu>

king<relation> like, as, equal to <literally> [n: s1=patient/property, s2=experiencer] OR [n: g=controller; s=patien/property] <cf. ˆkeng; ˆul>

king ak liquid [n: s=patient]

king set bright [n: s=patient], light [n]

king xit solid [n: s=patient]

king xok dark [n: s=patient]; darkness [n]

kis<part> part; be part of [n: g=the partitioned (cf. grammar: selectative)]

kjang<location.feet> fall [n: s=patient]; to fell [n: g=agent, s=patient]; {Loc} down; below; {Time} late <cf. ˆnjes> ?? Can this be replaced by a composed inchoative/resultative?

kjang set sunset; {Loc} west; {Time} evening (phon.: 'leave', 'dyn.')

kjas<through> to keep, to continue <continuity verb maker> [n: keeps the valence]

kje<open> to be open [n: s] <cf. ^kjo>

kjo<closed> to be closed [n: s] <cf. ^kje>

kjo _x_ y _y_ hesy _X_ encloses _Y_; _X_ covers _Y_ [ph]

kjok<imperative> shall, should [n: (g=controller,) s=event/action] <cf. ^xjohe>

kjok seng it shall hold/be true, that... [v: p]

kjol<hierarchy.control> ruler [n], being in control [n: g=agent], to rule, be in control of... [n: g=agent, s=controlled]

kjol tesa (Christian) God

kjox<count-> decimal unit word: 10, ten <cf. ^liko, ^tjen>

kjox<number> hexadecimal digit: 0xa: ten <cf. ^liko, ^tjen>

kjox il njati year

kjox njati tenth second; year

kju<locatino.end> go-to, come-to, arrive-at [n: g=event, s=location] <location verb: triggers location context, cf. ^y, ^sjo>

kjwhe<repeat.aggregate> to multiply <rarely used in normal float or ints, but used in quotients with bases greater than 16 to mark the end of the base>

kjwna<nc> to be separated from [n: s1, s2 OR g, s]

kul<count-> binary unit word: 0b10: sixteen <cf. ^tjen>

kul<number> digit: 2, two; the other <cf. ^en>

kul il njati unit of fifteen seconds

kul ja he, she, etc..., the other(s)

kul kis 'two parts': half [n: s=patient]

kul njati second second; unit of fifteen seconds

kut<start.learn> try, attempt

ky<special> DET, this, that; {to use} this way; {Time} now, then; {Loc} here, there [unary, modifyable p: a=restricting controller, p=determined] <cf. ^at>

ky la sentence pronoun (proclause): the last state, event or action that was mentioned (refering to a verb that had no agent) [n]

ky lu sentence pronoun (proclause): the last state, avent or action that was mentioned (refering to a verb that had an agent) [n]

kyla<others> or, alternative [n: s=alternative] <cf. ^u>; other [n] <used like 'all': as a partitive>

kyng<number> digit: 5, five <cf. ^exul>

kyng il njati hour

kyng njati fifth second; hour

kyngka<absence> be lost, be gone [n: s]

kyngka jun hjyx y i toilet [ph]

kyto<nc> to be functional [n: s=patient]; function [n]

la<change> to turn [n: s=patient]; to become [n: s1=result, s2=patient], <inchoative verb maker> [p] <cf. ^tja, ^lw; ^hon>

la huxu to die [n: s]

la i (first) patient; pronoun: the one something is done to (refering to a verb that had no agent) [n]

la ki to attract [n: s=what is attracted]

la kis to split [n: s]

la kje to open (by chance) [n: s]

la kjo to close (by chance) [n: s]

la sjune jes to change one's mind <inchoative, not resultative> [n: s]

la sys to expand [n: s]

la te hyko to rest

la te ting 'to become not (to be) with': to lose [n: s1=patient, s2=loser]

la ting 'to become (to be) with': to get [n: s1=patient, s2=receiver]

la tulu to become cooking/boiling [n: s]

la xe i (second) patient; pronoun: the one something is done to (refering to a verb that had no agnet). This refers to the second patient of a verb, not to the direct one. [n]

la xyt birth [n]; to be born (to turn to be born: that event) [n: g=agent, s=patient]

lak<imperative> must, force [n: (g=controller,) s=event/action] <cf. ˆkjok>

le<emphasis> EMPH, really, truly <emphatic particle> <cf. ˆtje, ˆlu> [unary p]

(le) seng but [n: s]

lel<large.count> to exceed [n: g=who exceeds, s=that is exceeded] {used for comparisons}

liko<number> hexadecimal digit: 0xb: eleven <cf. ˆjol>

ling<number> digit: 1, one <cf. ˆkul>

ling kis 'one part': whole, complete [n: s=patient]

lit<large> large, big, a lot, much, often, grown-up {time} for long [n: s=patient] <cf. ˆluk>

lit ak ocean; sea [n]

lit ki quite a bit, much, many

litju<nc> happy, happiness [n: (s=happy entity)]

ljehu<number> digit: 7, seven <cf. ˆxwt>

ljehu il njati day

ljehu njati seventh second; day

ljoku<number> hexadecimal digit: 0xe: fourteen <cf. ˆkehen>

ljot<swallow> ingest; swallow; eat {food}; drink {beverages}; breathe {air or gas-like stuff} [n: g,s]

ljux<flat.plant> leaf; sheet [n]

ljux kik tea

ljw?i<house> house [n], ({durative}) to dwell

ljw?u<house> home [n] <there seems to be evidence that this is related to ˆljw?i>

ljylu<nc> saucy, decoration [n]; decorative [n: s=decoration]

ljylu kaxi flower [n]

lo<foreign> siha<> Russisch

long<nc> eye [n], camera [n]

loxe<nc> show [n]

lu<create> to do [n: g=agent, s=patient]; to do [n: g, s] <resultative (inceptive) verb maker> [p] <cf. ˆtju, ˆla>

lu hex put [n: g=agent, s=patient]

lu hex _x_ kju kjang put _X_ down, to give up _X_, to resign (doing _X_) [n: g=controller, _X_] ?? Can this be replaced by a composed inchoative/resultative? make put/become put?

lu hon ling 'make result in one': {mind} to agree (process), to unite [n: g=agreers, s=about what]

lu huxu to kill [n: g, s]

lu i (first) patient; pronoun: the one something is done to (refering to a verb that had an agent) [n]

lu ki 'make together': to collect, to attract [n: g=initiator, s=patient]

lu kis to divide [n: g, s]

lu kje to open (by influence) [n: g,s]

lu kjo to close (by influence) [n: g,s]

lu kyngka to get rid of [n]

lu kyngka jun hjyx 'to get rid of body waste': to go to the toilet [ph]

lu njolu to teach [n:s,g]; with reflexive marker: to learn [n: s,g]

lu noki to win

lu sys to pull [n: g, s]

lu sys kju kul 'to pull into two (portions)': to stretch [n: g, s]

lu sys kju tuk 'to pull in all directions': to tear apart [n: g, s]

lu ting 'to make (to be) with': to take [n: g=agent, s=patient]; {arrive-at} to give [n: g=agent, s=patient]; {come-from} to fetch [n: g=agent, s=patient]

lu ting _x_ se hesy 'take away from around'= put/take off _X_

lu tjoni give shelter, care for

lu tulu to (make) boil/cook [n: g, s]

lu xyt to bear (the controlled event) [n: g=agent, s=patient]

luk<small> small, little, few, seldom, {time} for short [n: s=patient] <cf. ^lit; ^xat>

luk ki a bit, few

lutu<nc> besides [n: g]

lw<durative> to continuously (do) ... [n: s=that which takes time]; <durative verb maker> <cf. ˆtjw, ˆle>

lw hw <durative timely being> to exist [n: s=the existing entity]

lw tulu to cook, to boil [n: s]

lw xyt to live [n: s=patient]; life [n]

lwn<water.animal> milk [n]

ly?a<nc> and so forth <interjection, postmodifier>, <used in numbers to mark that the number is rounded and that more digits may follow>, or the like <adds a certain amount of vagueness to phrases it is used after>

nax<change.location> to move [n: g=who, s=whom/what]

nax jang tyx to walk, to wander

nax y i road, way, street {'i' is dropped if clear from context}

nen<control.good> to please <sometimes used to mark patient of composite unsaturated> [n: g=controller; s=controlled], <cf. ˆhan>

net<good> good <cf. ˆnok>

net kjo well closed

ni<foreign> hon<> Japanese

nil<nc> sex, gender, species-subclass [n]

ning<nc> to touch [n: (g=controller,) s=the things who touch each other]

njati<nc> second. a base unit (smallest irregular time unit). Fractional digts of this are in decimal by default.

njes<location.head> raise [n: g=agent, s=patient]; rise [n: s=patient]; {Loc} up; {Time} early <cf. ˆkjang> ?? Can/Must this be replaced by a composed inchoative/resultative?

njes set sunrise; {Loc} east; {Time} morning (phon.: 'come', 'dyn.')

njolu<nc> to be known [n: s=patient]; to know [n: g=who knows, (s=the piece of knowledge)]

njwng<large.energy> warm [n: s] <cf. ˆtjyk>

njy<aggregate> <collective particle> [unary p]

njy kel implication [n]

njy la ki attraction [n]

nok<bad> bad <cf. ˆnet>

noki<achieve.special> (the) win [n: s=what?]

nox<mouth.question> to ask, to pose a question [n: g=the one who asks, s=the question] <the person who is asked may be mentioned using ˆkju>

nu?u<fire> fire [n]

nuny<nc> inch

nwng<achieve> able, enable [n: (g=controller,) s=event/action] <cf. ˆsjol> <can express ... mood>

oke<nc> garden, yard [n]

ong<absence> far [v: s] <often used for modification; cf. ˆen>

ong<nc> be scared, be anxious [n: s]

ong ja he; she; it; etc. but not the one that was mentioned just before

ox<particle.create> END: phrase end particle <see grammar; cf. ˆox>

sal<wish.opinion.feeling> to choose [n: g,s]; choice [n: s]

sase<aggregate.accidental> things [n], this and that [n]

se<location.start> go-from, come-from [n: g=event, s=location] <location verb: triggers location context, <cf. ˆkju, ˆxja>

seng<truth> true [n: s], truth [n]; but [n: s] <cf. l. ‘vero’, ‘verum’, ^xus>

set<sun> sun [n]; to shine [n: s (e.g. the moon) OR g (e.g. for the overly correct: the sun)=source of light] <often with additional durative verb maker ^lw>; {Loc} south [n]; {Time} day [n] (phon.: ‘come’, ‘stat.’) <cf. ^xok>

sik<relevance> sense, reason to exist [n]

sin<start> front, in front of, start, before [n: g]; chest [n]; to begin [n: s=experiencer] <cf. ^xan>

sis<nc> fruit [n]

sje<negate> un-... <modifier; strong negation: forms the opposite>, minus {in numbers, given in front of the mantissa} <cf. ^te, ^les> [unary p]

sjexo<relation> to be related to [n: s1, s2]

sjo<time.start> start-at, from <time only> [n: g=event, s=time] <cf. ^hw, ^kju>

sjo ja start then, from then on [n: g=event]

sjo jo start now, from now on [n: g=event]

sjo ky start at that moment, then, from then on [n: g=event]

sjok<mouth> tongue; language [n] <cf. ^it>

sjol<achieve> possible [n: (g=controller,) s=event/action] <cf. ^xeng>

sjune<relation> different [n: s]

sjuxun<mouth.will> to ask, to pose a request [n: g=the one who asks, s=the request], please ... [ph] <the person who is asked may be mentioned using ^kju>

sjuxun nox xeng jo lu kyngka jun hjyx y at ‘Please let me ask you, where may I get rid of my body waste?’ Where’re the restrooms? [ph]

sjyx<nc> coarse; rude [n: g OR s]

so<assert> such, in such a way, so, correct, right <cf. ^heng>

so hon therefore

so kel in such a way that

son<nc> found, apparent, to be at hand [n: s=found thing]

su<particle.focus> REF: reference and focus particle <see grammar>

suhet<foreign> Swedish

suho<foreign> ni<> Finnisch

sus<nc> dirt [n]

swni<space> {math} regular 3d object (?Körper), ...-hedron

swni exul 'sixth regular hedron' (I know, the name is wrong): hexahedron, cube; dice

sys<distance> to stretch, to extend [n: s]

sys _x_ kju (hon) _y_ 'extend up to': enough: _X_ is enough for _Y_

tan<foreign> se<> French

tax<percept> see, hear, feel, perceive [n: s1=source, s2=experiencer] obverve, watch, listen [n: g=observer, s=source] <e.g. eye perceives=see, heart perceives=feel; cf. ˆjyku, mind perceives= understand; cf. ˆjes ...>

tax u it perceive and say: to confess, to admit. <FIXME: valence of ˆtax and ˆit is different. Repair the composition.>

te<negate> NEG, not, no, none <modifier; also works for non-saturated phrases; normal negation> <cf. ˆtje, ˆlet, ˆle> [unary p]

te ling (jes) to have an argument [n: g=the fighting parties, s=about what]; to have different opinions [n: s1=about what, s2=experiencers] <cf. dt: 'uneins sein', cf. ˆlu ˆhon ˆling>

te tuk some [n: g]

te xja not ending, until ever [n: g=event]

tesa<end.air> heaven [n]; sky [n]

tik<point> point, smallest division of, to split [n: g=splitter, s=divided entity]

ting<presence> to have, with [n: s1=patient/property -> s2=experiencer]; to have, to possess [n: g=controller, s=possessed]; to exist, 'there is, there are' [n: s=patient]; <for instrumental 'with', cf. 'to use': ˆjang>

(ting) ling jes 'with one mind': to agree (static) [n: g=those who agree, s=about what]

(ting) te hil (to be) misfortunate [n: s]

(ting) te hong helpless [n: s]

ting jang useful [n: s1=patient]

tisy<nc> examples, samples [n: g=examples for...]

tix<internal> inside [n: g]

tjaha<leasure> game [n] <usually the ˆi particle is inferred>, to play [n: g=player, s=(the played) game] <note: although this is durative, no durative particle is needed. Its interpretation is: a game is with ...>

tjang<nc> foul [n: s]

tjani<repeat> new [n: s], {time} again

tjen<number> digit: 0, zero <cf. ˆling>

tjoni<container> shelter [n], be cared for, be secure [n: s]

tjonw<reverse> back; against [n: s]; to reply [n: g, s]

tjonw (u) tjani again and again

tjwk<arms> arm [n] <cf. ˆtyk; ˆtjwxi>

tjwxi<legs> leg [n] <cf. ˆtyxi; ˆtjwk>

tjyk<small.energy> cold [n: s] <cf. ˆnjwng>

to?o<nc> system [n], be organised [n: s=patient]

to?o kjol rule, rules, system of organisation [n]

to?o kjol sjok grammar rules, grammar [n]

to?o tyk it font

tohit<foreign> sy<> German

ton<repeat> <iterative particle>

ton set to blink

tos<nc> name [n]; to name, be named [n: (g=controller), s1=topic, s2=the named]

tot<mass.air> carry; wear [n: g,s]

tu ting 'to make not (to be) with': to give (away) [n: g=agent, s=patient] <the recipient is added using 'go-to' or sometimes 'to take'; cf. ˆtun>

tuk<aggregate> all, both [n: g=the set of entities] <cf. ˆkyla>

tuk kul in pairs of two. dt: zu zweit [n: g]

tuk ling each one; alone [n: g]

tulu<fire> be boilingly hot [n: s]

twxo<bad.person> enemy [n]

tyk<hands> hand [n] <cf. ˆtjwk; ˆtyxi>

tyk it writing [n], written words

tyl<good> elegant by being simple and logical [n: s=patient]

tyl sjok The S2 language, Tyl-Sjok

tyxi<feet> foot [n] <cf. ˆtjwxi; ˆtyk>

tyxi<good.person> friend [n]

u<particle.comma> SEQ: and; or; but; although [binary p: constituent 1, constituent 2] <used for enumerations, too (English: ‘and’). Very, very rarely used on top-level, mostly only in sub-ordinate constructions that are to be used together. cf. ˆwng, ˆseng>

ul<control.bad> to harass; <sometimes used to mark patient of composite unsaturated> [n: g=controller, s=controlled] <cf. ˆnen>

utik<nc> to be fast [n: s=fast thing]

wng<aggregate> to add [n: g=experiencer, s=patient] <cf. ˆu>; also [n: s=phrase]

xan<end> back side, back <of a body, too; but not: return>, behind, after, end [n: g=of what?]; complete, to be complete [n: s] <perfective marker> [unary p] <a controller is added using ˆlu> <cf. ˆsin>

xe<absence.focus> SKIP: non-referencing marker: marker for unmentioned phrase <see grammar>

xel<relevance.good> (in s.o.’s) favour, for [n: g=useful entity, s=beneficiary] <cf. ˆting>

xeng<control> allow, may [n: (g=controller,) s=event/action] <cf. ˆlak>

xit<metal> metal [n] <cf. ˆxjyn>

xja<time.end> last-until [n: g=event, s=time] <cf. ˆsjo, ˆse>

xja ja end then, until then [n: g=event]

xja jo end now, until now [n: g=event]

xjal<purpose> serve, purpose, for [n: g=useful entity, s=experiencer] <cf. ˆxel>

xjohe<wish> want, let there ..., let’s ... [n: (g=controller,) s=event/action] <cf. ˆnwng>

xjohe so so be it [ph]

xjuk<air> air; gas [n] <cf. ˆxit>

xjun<number> digit: 4, four <cf. ˆkyng>

xjun il njati unit of fifteen minutes

xjun njati fourth second; unit of fifteen minutes

xjwl<earth> earth [n] <cf. ^xjang>

xjyn<material.plant> wood [n] <cf. ^xjwl>

xo<particle.destroy> START: phrase start particle <see grammar; cf. ^xo>

xok<moon> moon [n]; {Loc} north [n]; {Time} night [n] (phon.: ‘leave’, ‘stat.’) <cf. ^set>

xuk<count-> hexadecimal unit word: 0x10: sixteen <cf. ^tjen>

xuk<number> hexadecimal number: 0x10: sixteen <cf. ^tjen>

xus<force.back> to resist, withstand, versus, against [n: g=agent, s=patient] <FIXME: think about this entry>

xwt<count-> octal unit word: 010: sixteen <cf. ^tjen>

xwt<number> digit: 8, eight <cf. ^han>

xwt il njati week

xwt njati eighth second; week

xyt<create.animate> be born (stative) [n: g=agent, s=patient]; life [n], ‘continuously be born’: to live [n: s=patient] {durative ^lw}

xyt nen to exist [n: s=existing entity <valence of nen>]; existence

y<location.point> take-place-at, be located at, be at [n: g=event, s=location] <location verb: triggers location context, cf. ^se, ^hw>

y hw to happen

y i place [n]

y sys _x_ to extend _X_ (amount of space) [n: g=event]

y tjonw hw tjani to happen again and again [n: s]

yn<clothes> jacket; sheet; frame [n]

yn kju tyx overcoat, cloak, gown

yn xel tyx sock

Chapter 18

Errata and TODO

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TO DO:
    - Make the \REF{} particle a topic marker, otherwise top-level sentences are
      not disambiguatable ('The son has a father', 'The father has a son.').
      (DONE, I think.  Check this.)

    - Make re-positioning words be full verbs, too, like some in Mandarin:
      shang4, xia4 can function as postpositions:
          zai4 yi3zi shang4 you3 shu1.  (CHECK tone of yizi)
      or verbs:
          wo3 shang4 che1.

    - decide how to cope with gapping:
          X is rich and drives a car.
      Problem here:
          Patient: rich X.
          Agent:   X move car.

      So we may need something to compose this.  E.g. something like
      passive/antipassive or the like.  But I do not want to have
      another grammar rule.  Maybe even disallow it and require a
      back reference via pronoun:
          A is rich and <s/he> drives a car.

      This is likely to introduce structures that violate the
      increasing control constraint, however.

    - have no resultative and inchoative verbs in the lexicon.
    - repair the sample sentences according to this.
    - repair the lexicon according to this.
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