#### Eine Vertiefungsarbeit über

# KÜNSTLICHE SPRACHEN und MINIMALISTISCHE SPRACHEN

Technische Berufsschule Zürich

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#### Zusammenfassung

Im Laufe meiner VA habe ich versucht, die Beziehung zwischen dem Umfang einer Sprache (d.h. der Anzahl der allgemein gebräuchlichen Wörter und der Komplexität ihrer Grammatik) und ihrer Verwendbarkeit im Alltag zu entdecken und besser zu verstehen. Zu diesem Zweck habe ich eine Weile damit verbracht, meine eigene Sprache von Grund auf zu entwickeln und einige Texte in diese Sprache zu übersetzen. Dann habe ich die Texte an meine Freunde weitergegeben, die versucht haben, sie ins Deutsche zurück zu übersetzen. So konnte ich feststellen, wie schwer die Sprache zu verstehen ist.

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#### 1 Einführung und Projektbeschreibung

#### 1.1 Kurze Erklärung der UG Theorie

In der Linguistik ist das Konzept der "Universellen Grammatik" auch heute noch ein heiss diskutiertes Thema. Diese Theorie besagt, dass jeder Mensch von Geburt an die gleiche Grundstruktur für Sprache in seinem Gehirn hat. Die moderne Form der Theorie besagt, dass es keine festen Regeln gibt, die für jede Sprache gelten, sondern dass es Prinzipien gibt, die für jede Grammatik gelten, die aber durch Parameter angepasst werden, was zu der fast fraktalen Komplexität aller Sprachen der Welt führt. Ein Beispiel hierfür wäre das mögliche Prinzip, dass Satzbewegungen nur auf einen kurzen Bereich beschränkt sind, und ein Beispiel für einen Parameter ist der "Head-Parameter", der vorschreibt, in welcher Reihenfolge Phrasen im Verhältnis zu ihrem "Kopf" gebildet werden. (Cook and Newson, 2007)

Der Grund, warum die Universalgrammatik eine so schwer zu knackende Nuss ist, liegt darin, dass Sprache etwas extrem Subjektives ist und dass es zumindest solange wir das Geheimnis des menschlichen Bewusstseins nicht gelüftet haben - unmöglich ist, genau zu wissen, was jemand bewusst oder unbewusst zu einem bestimmten Zeitpunkt denkt. In meinem letzten Aufsatz, in dem ich mich auf die Theorie der Universalgrammatik konzentrierte, sprach ich mich für die Verwendung konstruierter Sprachen aus, um zu erproben, was mit der menschlichen Sprache möglich ist, und um die Tiefen unserer Sprachfähigkeiten auszuloten.

Deshalb habe ich mich entschlossen, die mir für dieses Projekt zur Verfügung stehende Zeit (und einen beträchtlichen Teil meiner Freizeit) damit zu verbringen, die Funktionsweise von Minimalsprachen besser zu verstehen, nachdem ich mich für das Konzept von Toki Pona, einer Sprache mit nur etwa 130 Wörtern und 7 Grammatikregeln(Lang, 2014), begeistert hatte. Obwohl ich zugeben muss, dass dies wenig mit der Universellen Grammatik zu tun hat, könnte es einige universelle Regeln in Bezug auf die Grösse des Lexikons und den Punkt, an dem Abstraktion zu mehrdeutig wird, aufdecken.

#### 1.2 Prozess der Spracherstellung

Zu Beginn meiner VA und als Vorbereitung darauf begann ich, mich mit der Phonologie und Grammatik der Sprache zu beschäftigen. Aus persönlichem Interesse verfügte ich bereits über einige Kenntnisse und Erfahrungen mit dem Prozess der Sprachentwicklung. Ich hatte an vielen Online-Foren teilgenommen, die sich mit konstruierten Sprachen, der Konstruktion von Sprachen und der Linguistik im Allgemeinen befassten. Der erste Schritt bestand darin, die Phonologie zu konstruieren, d. h. die Laute, die in der Sprache verwendet werden sollten. Das war ein ziemlich einfacher Schritt, da ich mir darüber schon seit einiger Zeit Gedanken gemacht hatte und die einfache Phonologie, die ich mir bereits ausgedacht hatte, nur noch geringfügig ändern musste. Ich fügte auch ein System von Umlauten ein, das auf der Rundung der Vokale basiert.

Dies bedeutete, dass 3 der 4 Vokale in der Sprache von ihrer "weichen" Form (ungerundet für vordere Vokale und gerundet für hintere Vokale) zu ihrer "harten" Form (das Gegenteil) wechseln konnten. Der Grund für den Unterschied zwischen vorderen und hinteren Vokalen war, dass vordere Vokale in der Regel ungerundet sind, während hintere Vokale normalerweise gerundet sind. (Stevens, 1972) Durch die Abstraktion "hart"/"weich" klang es für die erwarteten Sprecher (Deutsch-/Englischsprecher) natürlicher.

Danach begann ich mit verschiedenen grammatikalischen Strukturen zu experimentieren und zu überlegen, wie man sie umsetzen könnte. Obwohl dies für die Einfachheit der Sprache vielleicht keine gute Idee war, gefiel mir die Idee, ein Gross- und Kleinschreibsystem einzuführen, um der Sprache eine freie Wortfolge zu geben. Das habe ich mit einfachen Suffixen gemacht, die den germanischen Grossbuchstabensuffixen nicht ganz unähnlich waren, um die Mühe des Lernens auszugleichen. Danach wurde in ähnlicher Weise ein einfaches Zeitsystem mit einfachen Suffixen für Vergangenheit, Gegenwart und Zukunft aufgebaut. Der Aspekt wurde vorerst weitgehend vernachlässigt, da er später möglicherweise durch Hilfsadverbien ausgedrückt werden könnte.

Nachdem sich die ersten Ansätze einer Grammatik herauskristallisiert hatten, überlegte ich mir, wie ich den erforderlichen Wortschatz reduzieren könnte, um die wenigen Wörter, die ich definieren wollte, optimal zu nutzen. Ein Gedanke, der mir kam und absolut Sinn machte, war ein konsonantisches Wurzelsystem wie im Arabischen oder Hebräischen, begleitet von der Idee, eine Form der Wortumkehrung einzubauen, um die Bedeutung umzukehren, d. h., wenn man die Wurzeln eines Wortes umkehrt, würde es sein Antonym bilden. Beides zusammen würde bedeuten, dass jemand, der die Sprache lernt, nur eine Wurzel lernen muss und daraus bis zu 6 Bedeutungen ableiten kann.

Da das Wurzelsystem nun einen bestimmten Vokal einer bestimmten Wortart zuordnet, können wir ihre "harten" Formen verwenden, um einige semantische Veränderungen anzuzeigen. Ich beschloss, dass die reguläre Form die indikative Stimmung für Verben, die Singularzahl für Substantive und der positive Grad für Adjektive sein würde. Für die Umlautformen entschied ich mich für den Imperativ für Verben, den Plural für Substantive und den Superlativ für Adjektive. Dadurch verdoppelt sich die Anzahl der Formen, die man aus einer einzigen Wurzel extrahieren kann, wie Sie im folgenden Diagramm sehen können.

Danach wollte ich das System noch weiter ausbauen und schuf einige Präfixe, die unabhängig von der Wortart des Wortes verwendet werden konnten. Diese würden es dem Sprecher ermöglichen, die möglichen Bedeutungen noch zu erweitern. Zunächst wurden ein Negationspräfix sowie ein Augmentativ und ein Diminutiv hinzugefügt. Da diese auf alle vorhandenen Ableitungen angewandt und sogar kombiniert werden können, vervielfachte sich die Zahl der möglichen Bedeutungen, die einem einzigen Wort entnommen werden können, auf 60! Und dabei ist noch nicht einmal berücksichtigt, dass die meisten Wörter absichtlich mehrdeutig sind, damit sie für mehrere Dinge stehen können. Zunächst war dies recht hilfreich, um die Anzahl der Wörter zu reduzieren, die ich der Sprache hinzufügen musste, aber es wurde ziemlich schnell klar, dass dies jeden Lernenden

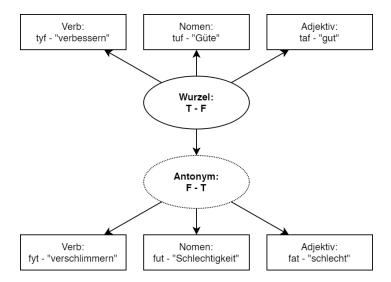


Abbildung 1: Ein Diagramm aller Ableitungen der Wurzel "T-F" mit Inversion und dem bikonsonantischen Wurzelsystem.

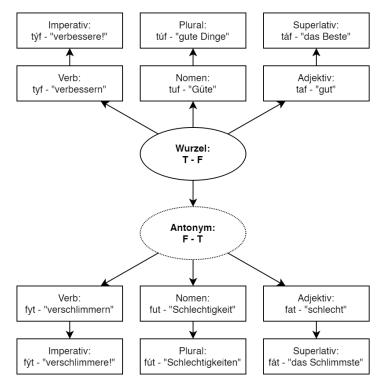


Abbildung 2: Ein Diagramm aller Ableitungen der Wurzel "T-F" wenn mann die Umlautformen dazufügt.

der Sprache nur verwirren würde. Zumal die Haupttaktik bei der Wortbildung darin bestand, zunächst zu versuchen, das Wort aus anderen Wörtern zusammenzusetzen (z. B. "Regen" = "fallende Flüssigkeit"), aber obwohl ich in der Tat es geschafft hatte den Wortschatz sehr begrenzt zu halten, glaubte ich nicht, dass irgendiemand ausser mir sie verstanden hätte. Ich habe dies auch getestet, indem ich meinen Freiwilligen ab und zu zusammengesetzte Wörter zum Übersetzen vorgelegt habe. Die meisten Antworten bestätigten meine Befürchtungen, so dass ich eine Idee entwickelte, um die Testkapazität der Sprache zu verbessern und gleichzeitig meine Angst vor dem Hinzufügen neuer Wörter zu überwinden: Ich würde das Lexikon in kleine Segmente aufteilen, wobei die kleinste Ausgabe der Sprache nur die grundlegenden grammatikalischen Wörter und eine Handvoll anderer enthalten würde. Danach würde der Umfang des Lexikons allmählich zunehmen, bis er ein Maximum erreicht, das ich immer noch relativ klein halten wollte. Auf diese Weise könnte ich möglicherweise Texte in immer kleinere Editionen der Sprache übersetzen, um zu sehen, an welchem Punkt genau sie jeden Anschein von Bedeutung verliert. Ich beschloss, mir nicht allzu viele Gedanken über die Hinzufügung unnötiger Wörter zu machen, da ich sie später immer noch einschränken und das Lexikon unterteilen konnte, sobald ich die gesamte Sprache etabliert hatte.

Nachdem diese Grundlage mit dem Gerüst unserer Sprache ausgestattet war, konnte ich mich an die fortgeschritteneren grammatikalischen Dinge wie Konditionalsätze und Relativsätze machen. Diese habe ich ähnlich wie bei Toki Pona gelöst, weil es einfach zu verstehen ist und ich keine Zeit damit verschwenden wollte, mir etwas Besseres einfallen zu lassen. Als ich das Ergebnis hatte, testete ich es an einigen Sätzen und befragte meine Testpersonen, was sie davon hielten und ob ich ihrer Meinung nach etwas hinzufügen oder entfernen sollte. Sie hatten im Allgemeinen recht wenig Feedback, und so hielt ich es für den Moment für gut genug und habe lediglich kleine Details verbessert und Wörter hinzugefügt/geändert, als ich weitere Testsätze schrieb und kurze Texte übersetzte.

#### 1.3 Prozess der Sprachprüfung

Zu Beginn des Projekts hatte ich weitaus ehrgeizigere Erwartungen, was das Testen der Sprache anbelangt, aber im Laufe der Entwicklung wurde klar, dass ich das Testen der Fähigkeiten der Sprache einschränken sollte. Schon bald wurde das Versuchskonzept auf die folgenden Punkte reduziert: Zuerst würde ich einen grösseren Textblock in die Sprache übersetzen, danach würde ich meinen Freiwilligen dasselbe Wörterbuch zur Verfügung stellen, das ich für die Übersetzung verwendet hatte, und ihre Fragen zur Grammatik beantworten, während sie den Text zurück ins Deutsche übersetzten. Auf diese Weise konnte ich die Sprache testen und verfeinern, indem ich den grösseren Text übersetzte und so herausfand, wie einfach es ist, die Bedeutung komplexerer Konzepte in der Sprache zu vermitteln, und meine Freiwilligen konnten zeigen, wie gut man sie verstehen kann. Der Text, für den ich mich schliesslich entschied, war die Geschichte vom "Turmbau zu Babel" — ein Favorit in der conlanging community. Hier ist der vollständige Text der Geschichte auf Deutsch:

Die ganze Erde hatte eine Sprache und ein und dieselben Worte. Als sie ostwärts aufbrachen, fanden sie eine Ebene im Land Schinar und siedelten sich dort an. Sie sagten zueinander: Auf, formen wir Lehmziegel und brennen wir sie zu Backsteinen. So dienten ihnen gebrannte Ziegel als Steine und Erdpech als Mörtel. Dann sagten sie: Auf, bauen wir uns eine Stadt und einen Turm mit einer Spitze bis in den Himmel! So wollen wir uns einen Namen machen, damit wir uns nicht über die ganze Erde zerstreuen. Da stieg der HERR herab, um sich Stadt und Turm anzusehen, die die Menschenkinder bauten. Und der HERR sprach: Siehe, ein Volk sind sie und eine Sprache haben sie alle. Und das ist erst der Anfang ihres Tuns. Jetzt wird ihnen nichts mehr unerreichbar sein, wenn sie es sich zu tun vornehmen. Auf, steigen wir hinab und verwirren wir dort ihre Sprache, sodass keiner mehr die Sprache des anderen versteht. Der HERR zerstreute sie von dort aus über die ganze Erde und sie hörten auf, an der Stadt zu bauen. Darum gab man der Stadt den Namen Babel, Wirrsal, denn dort hat der HERR die Sprache der ganzen Erde verwirrt und von dort aus hat er die Menschen über die ganze Erde zerstreut.(Bib, 2020)

Ursprünglich hatte ich auch geplant, Testgespräche mit meinen Freiwilligen zu führen, aber sie waren zu dieser Zeit viel zu sehr mit ihren eigenen Projekten beschäftigt, um eine ganze Sprache zu lernen, und wir konnten uns während der Pandemie nicht mehr treffen. Hätten wir es dennoch getan, wäre meine ursprüngliche Idee für das Experiment gewesen, eine kurze Zeit unseres normalen Lebens damit zu verbringen, die grundlegenden Dinge zu beschreiben, die wir tun, und uns normal in der Sprache zu unterhalten. Das wäre meiner Meinung nach der beste Weg gewesen, um die Fähigkeit der Sprache zu testen, alltägliche Dinge auszudrücken. Das System des skalierenden Lexikons könnte auch verwendet werden, indem man die Konversation zunächst auf das kleinste Lexikon beschränkt und den Umfang allmählich erhöht, bis der Punkt erreicht ist, an dem es Sinn macht, oder umgekehrt.

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- 2.4 Schlussfolgerungen zur Spracherstellung
- 3 Lernjournal & Reflexion
- 3.1 Lernjournal
- 3.2 Reflexion über die VA

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Anhang A: Projektbeschrieb

# Project Description

#### Samuel Pearce

#### September 23, 2021

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#### 1 Problem Description

In the course of this Advanced Paper, I intend to increase my knowledge on the scope of language in relation to its complexity. I also intend to research language creation and will create at least one language of my own to experiment with its scale and applicability. The main problem I see is that I have never put my theoretical knowledge to the test in the arena of language creation. I also lack the knowledge on microscopic languages and wish to further my understanding in this field.

#### 2 Current State of Research

Current experts in the field of language invention, such as David J. Peterson, creator of the in-world languages for many popular modern media, like Dothraki from Game of Thrones or Paul Frommer (inventor of Na'vi, the language from Avatar) have explored and paved the path for language creation. Nowadays, learning the basics of linguistics through amateurishly creating fantastical languages is — in my personal opinion — the best method to retain such abstract and complex topics as Ergative-Absolutive Case and polypersonal agreement.

Existing research into language scope is fairly limited and mostly consists of common-sense facts like the fact that a language with only one word is nearly entirely useless. Though I have no exceptional expectation from my experimentation, I hope to at least document how easily and richly a story could be translated into extremely compact languages.

#### 3 Questions to be Answered

- 1. How difficult is it to create a language?
- 2. How small can a language be while still being applicable in most daily situations?
- 3. How well can a short literary text be translated into such a small language?
- 4. And (if time grants it), how difficult is it to create a writing system & font conforming to an irregular orthography?

#### 4 Method

I propose to split this project into its two main constituent parts thusly: I will begin by creating the language or languages and document the progress and grammar in the first short paper. In the second, I'll document the language's effective usability by testing it in a dialogue with volunteers and by translating a text into the language(s), followed by a commentary on the effectiveness of the language in these situations. Finally, if time permits, I would also like to enrich the language's appearance and learn more about the development of writing systems and create a font which allows the language's native orthography to written on computers.

#### 5 Required Materials

For the proposed project should following materials be sufficient, all of which I already possess.

- Mark Rosenfelder's Linguistic textbooks focusing on language creation:
  - The Language Construction Kit
  - Advanced Language Construction &
  - The Conlanger's Lexipedia
- Various Online Resources
- Willing Volunteers for experimentation (Most likely my long-suffering friends)
- A computer equipped with text editor and LATEX for document typesetting
- Open Source Font creation software (Birdfont)

#### 6 Time Plan

I propose to divide the allotted 8 weeks as follows:

#### • Week 1:

- Consulting with volunteers
- Language Development
- Logging Development Progress

#### • Week 2:

- Language Development
- Logging Development Progress

#### • Week 3:

- Language Development
- Logging Development Progress

#### • Week 4:

- Finalize Languages
- Document Grammar and findings
- Dialogue with volunteers

#### • Week 5:

- Text translation
- Document translation process

• Week 6	:
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- Text translation
- Document translation process

#### • Week 7:

- Complete Report on language efficacy and development process
- Possible Writing system drafting

#### • Week 8:

- Finish Writing System and Font
- Perhaps write a small report on the script development

#### 7 Signatures

Student	Date
Teacher	Date

Anhang B: Sutlun Grammatik und Lexikon

# REFERENCE GRAMMAR & DICTIONARY of Sutlun

By Samuel Pearce

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# Part I Grammar

# Chapter 1

# Phonology

#### 1.1 Consonants

	Bilabial	Alveoalar	Palatal
Nasal	m	n	
Plosive	p	t	k
Fricative	φ [f]	s	x
Liquid	w	1	j

#### 1.2 Vowels

	Front	Back
Close	i · y	ш [л] · u
Middle	e	
Open	$a [xe] \cdot ce$	

#### 1.3 Phonotactics

In Sutlun, roots are bi-consonantal and the vowel determines what part of speech the word is. For these root words, the consonant structure is **CVC** Where V is any vowel except /ə/ and C is any consonant. The root word is also always stressed. This applies for compounds as well:

"jupympul" 
$$\rightarrow$$
/ju.pim.'pul/  $\rightarrow$  "Heavy rain"

Roots are the core of lexicon, there are only a handful of words which are not roots. These include:

• 'ek' & 'ke' are typically used as prefixes to form the negative form and the binary question form of words, but when used alone they stand for 'no' & 'yes', respectively.

- 'uwu' acts as the conditional marker, it's placed at the end of a sentence to indicate that the next sentence is only true if the first one is.
- 'awa' acts as the negative conditional marker, like 'but' in English.
- 'en' is a stand-in for the next clause. It allows relative clauses by essentially saying 'this:'. It is treated like a noun and can have the same suffixes applied to it.

Here are some examples to clarify the meaning of the "grammatical words"

- (1) Ut ketyf puxe? ek. 2S.NOM QUE.like food.ACC? no "Do you want some food? No."
- (2) Pampul pym uwu, up fatsyn. down-water.NOM fall COND, 1S.NOM bad-feel. "If it rains, I'll be sad."
- (3) Up tyf ene, úp kin wukfusem. 1S.NOM like this.ACC, 1P.NOM go plant-place.DAT. "I like it when we walk in the park."

#### 1.4 Orthography

#### 1.4.1 Romanisation

The romanisation used might seem quite strange to an outside observer, but it was designed to emphasize the duality of the main vowels  $(y, \hat{u}, a)$  with their rounded equivalents  $(\hat{y}, u, \hat{a})$  which represents a change in meaning for the roots. Please note that the unrounded 'u' is marked, whereas the other two unrounded main vowels aren't, this is due to front vowels typically being unrounded, while back vowels are typically rounded [1]. The more "typical" vowel is the "default" form, while the less typical form is the inflected one. Though given that this might be difficult to understand and not as easy to type as it is on a QWERTZ keyboard, a more phonetic alternative is also provided with digraph alternatives to the diacritics used.

IPA	Rom.	Alt.	IPA	Rom.	Alt.
р	p	р	W	w	w
t	$\mathbf{t}$	t	1	1	1
k	k	k	j	j	j
m	$^{\mathrm{m}}$	m	a	a	a
n	$\mathbf{n}$	n	œ	á	a ö/oe
ф	f	f	i	у	i
s	$\mathbf{s}$	s	У	ý	ü∕ue
x	X	x	ш	ú	ue
Э	e	e	u	u	uu/oo

#### Consonants

	Bilabial	Alveolar	Velar
Plosives	Ø P	<b>0</b> T	αк
Nasals	<b>M</b>	<b>m</b> N	
Fricatives	<b>%</b> F	<b>%</b> S	₹ X
Glides	<b>8</b> W	<b>-8</b> L	<b>ð</b> J

#### Vowels

	Front			
	Rounded Unrounded		Rounded	Unrounded
Closed	ФУ	ΦÝ	y u	Ú
Middle		ЗЕ		
Open	П A	ĠÁ		

Figure 1.1: A diagram of all the letters in Lumlun, the writing system for Sutlun

#### 1.4.2 Writing System

Given the rigidly structured syllables, I experimented with the idea of writing systems that used this to their advantage for more regular and compact glyphs, but found this too complicated and received feedback that confirmed this fear. So I decided to go for a simpler alphabetic system for the writing system. I definitely wanted to make it a featural system though, because I had layed the phonemes out in a systematic manner for this purpose.

# Chapter 2

# Morphology

#### 2.1 Universal Inflections

These are a few inflections (mostly prefixes) which can be applied to any root, no matter the part of speech. Though these changes may not always yield a result that fully makes sense.

#### 2.1.1 Opposites

You can form the opposite meaning of a word by flipping the root's consonants:

"taf" 
$$\rightarrow$$
 "good" "fat"  $\rightarrow$  "bad"

#### 2.1.2 Negation

To negate anything, simply prefix it with "ek-". For nouns, this forms the phrase "not X", where X is the negated noun e.g.

"pux" 
$$\rightarrow$$
 "food" "ekpux"  $\rightarrow$  "not food"

For Verbs, this means to not do the action:

"pýx" 
$$\rightarrow$$
 "eat" "ekpýx"  $\rightarrow$  "don't eat"

And for adjectives, it means not like the adjective:

$$\label{eq:pax} \begin{tabular}{ll} "pax" \to "delicious" \\ "ekpax" \to "not delicious" \\ \end{tabular}$$

It is important to bear in mind the difference between negation and opposites, as they often seem to share the same meaning, but "not good" is not the same as "bad".

#### 2.1.3 Binary Question Prefix

If you wish to ask a binary (yes or no) question, you can simply add the 'ke-' prefix to the verb, or to any word you wish to emphasize. E.g.:

(4) Ut ketyf múne? 2S.NOM QUE-like game.P.ACC? "Do you like games?"

#### 2.2 Nouns

#### 2.2.1 Number

In Sutlun, Nouns all have the "u" sound in the root which is unrounded for singular and rounded for plural. For example:

"mun" 
$$\rightarrow$$
 "a game" "mún"  $\rightarrow$  "many games"

#### 2.2.2 Case

Sutlun has 4 grammatical cases which are all formed with a simple suffix according to the following table:

Case Name	Suffix	Example	
Nominative	-	pux	
Accusative	-е	puxe	
Dative	-em	puxem	
Genitive	-es	puxes	

#### 2.2.3 Definitiveness

By default, nouns are indefinite and if they are definite, it can be parsed through context, but if you wish to define a noun as being definite, you can give it the '-te' prefix.

"mun" 
$$\rightarrow$$
 "a game" "temun"  $\rightarrow$  "the game"

#### 2.3 Verbs

#### 2.3.1 Mood

Sutlun has two verb moods: Indicative & Imperative. These are also formed by the root-sound's roundness. All Verbs use the "y" sound for their roots. "Y" is indicative, while " $\circ$ " is imperative:

"ut kyn" 
$$\rightarrow$$
 "You go." / "You are going."   
"ut kýn"  $\rightarrow$  "You, go!"

2.4. ADJECTIVES 13

#### 2.3.2 Tense

Sutlun has 3 tenses which are all formed with a simple suffix according to the following table:

Tense Name	Suffix	Example	Meaning	
Past	-et	pixet	ate, were eating	
Present	- (-ef)	pix	eat, are eating	
Future	-ej	pixej	will eat	

The present tense is the default tense and needn't be marked, but if it is, it emphasizes that the action is taking place now. E.g.:

```
"ut kyn kumem?" \rightarrow "Where are you going?" "ut kynef kumem?" \rightarrow "Where are you going now?"
```

#### 2.4 Adjectives

#### 2.4.1 Positive & Superlative

Adjectives in Sutlun all have the "a" sound in their root which is rounded to form the superlative form of the adjective.

"taf pux" 
$$\rightarrow$$
 "good food"  
"táf pux"  $\rightarrow$  "the best food"

Adjectives may also be used alone in the position of the verb of the sentence to mean "to be like X". i.e.:

```
"ut taf" \rightarrow "You're good." 
"mukmun mán" \rightarrow "This game is the most fun."
```

#### 2.4.2 Comparing

To form the comparative of an adjective, you add the augmentative or diminutive prefix, depending on whether you want the positive or negative form:

```
"upes xul jutaf." \rightarrow "My house is better." "ukes puxe ujtaf utes puxem" \rightarrow "Their food is worse than your food." "ut kenyk juwas mun?" \rightarrow "Did you get a newer game?"
```

#### 2.5 Other

Some roots also allow a fourth option using 'e' as the vowel. This changes meaning from word to word and is really the only exception, but it is possible to use the language without the "e-words".

For some words the "e-form" is a preposition for when the implied preposition is not clear, or when it needs to be overridden. e.g.:

"I bring food from them."

For other words, this is more of an expletive, for example "kem" which acts a general exclamation of surprise, i.e. "What!?"

Some e-words are conjugations, such as "xel" which I've interpreted to mean "and". E.g.: "Up xel ut"  $\to$  "You and I".

The meaning of these words is fairly flexible though and can be left to interpretation. If I've seen a useful possible meaning, though, I have noted it in the dictionary at the end of this grammar.

# Chapter 3

# Syntax

#### 3.1 Phrases

All forms of phrase follow the same order for dependents:

Preposition/Demonstrative  $\rightarrow$  Posessor  $\rightarrow$  Adjectives (No internal order)  $\rightarrow$  HEAD

An example of all of these together would be:

"xel upes taf jumuklumxul"  $\rightarrow$  "In my good, big house."

#### 3.2 Compounds

Compounds can be formed from any type of speech with only the last determining what the whole compound is. E.g.: "jupympul"  $\rightarrow$  "big falling water"  $\rightarrow$  "heavy rain".

At the core of the compund is the grouping of roots with no suffixes or prefixes. Then suffixes and preixes may be added on to the compound as a whole.

#### 3.3 Sentence Order

The most common order for a sentence is SVO in Sutlun, but because it has case marking, the order is almost completely free:

(6) ukes lumxulem up kyn puxe 3S-GEN house-DAT 1S-NOM move-to food-ACC "I take food to his house."

The only exception is that a genitive must always be placed immediately before its posessum, unless there is only one noun in the sentence:

- (7) ukes lumxulem up ...
- (8) \* lumxulem up ukes ...

#### 3.4 Conditionals

Conditionals, as have been mentioned previously are quite simple: To indicate that a clause is predicated on a previous clause, you can join them with "uwu,":

(9) Pampul pym uwu, up fatsyn. down-water.NOM fall COND, 1S.NOM bad-feel. "If it rains, I'll be sad."

#### 3.5 Subordinate Clauses

As also previously mentioned, subordinate clauses are created by using "en" as a stand-in noun representing the succeeding clause:

(10) Up tyf ene, úp kin wukfusem.1S.NOM like this.ACC, 1P.NOM go plant-place.DAT."I like it when we walk in the park."

'En' can also be used to mean the previous sentence or statement, generally when it's used at the beginning of a sentence. The author/speaker should make it clear which is meant through context.

If no 'en' or other conjunction is used in the sentence before a clause, it counts as being grouped with the previous phrase. E.g.:

(11) Úk sutlynet ene úkem, úk týlej
1P.NOM air-word.PST this.ACC 1P.DAT, 1P.NOM make.IMP.FUT
wamlume, úk jufýlej wamlume.
flat-stone.ACC, 1P.NOM AUG.heat.IMP.FUT flat-stone.ACC.
"We said to ourselves: 'we shall make bricks and we shall fire the bricks
well."'

# Part II

# Lexicon

#### Р

#### P-X - Food, Drink

Antonym: "Excretion, Expelling" See X-P

 $\mathbf{pux} - /\mathbf{pux} / n.$  sg. • Food, Drink, an item of food, a meal

 $\mathbf{p\acute{u}x} - /\mathbf{p}\mathbf{n}x / n.$  pl. • Food, many items of food/drink

 $\mathbf{pyx} - /\mathbf{pix}/v$ . ind. • to eat, to drink, to consume

 $\mathbf{p\hat{y}x} - /\mathbf{pyx}/v$ .  $imp. \bullet eat!$ , drink!, consume!

pax − /'pax/ a. pos. • delicious, tasty

páx – /'pœx/ a. sup. • most delicious

#### $\mathsf{T}$

#### T-F – Good, Positive

Antonym: "Bad, Negative" See F-T

 $\mathbf{tuf} - / \mathbf{tuf} / n$ . sq. • a good deed/thing, the concept of goodness

 $\mathbf{túf} - / \mathbf{t} \Lambda \mathbf{f} / n$ .  $pl. \bullet \text{ many good things}$ 

 $\mathbf{tyf} - /\mathrm{tif}/v$ . ind. • to improve, fix, better

 $\mathbf{t\acute{y}f}$  - /' $\mathbf{tyf}/v$ . imp. • fix!, improve!

 $taf - /taf / a. pos. \bullet good, well$ 

 $táf - /tcef/a. sup. \bullet the best$ 

#### T-S - Quiet, Still

Antonym: "Noise, Sound, Loud" See S-T

 $\mathbf{tus} - / \mathbf{tus} / n. sg. \bullet \mathbf{quiet}$ , peace, stillness

 $\mathbf{t\acute{us}} - /\mathrm{tas}/\ n.\ pl.$  • much stillness, much peace

tys - /tis/v. ind. • to be quiet, calm down, make peace

 $\mathbf{t\acute{y}s} - /\mathrm{tys}/v$ . imp. • be quiet!, calm down!

 $tas - /tas / a. pos. \bullet good, well$ 

tás - /tes/a. sup. • the best

### K

#### K-M – Query, What?

Antonym: "Demonstrative, Thing, That" See M-K

**kum** – /'kum/ n. sg. • what thing?

**kúm** – /'kʌm/ n. pl. • what things?

 $\mathbf{kym} - /\mathrm{kim}/v$ . ind. • doing what?

 $\mathbf{k\acute{y}m}$  – /'kym/ v. imp. • (special case) what are you doing?

 $kam - /kam / a. pos. \bullet like what?$ 

**kám** – /'kœm/ a. sup. • most like what?

**kem** − /'kem/ excl. • What!? (General indicator of confusion)

#### K-N – Go, Move, Give

Antonym: "Come, Bring" See N-K

**kun** − /'kun/ n. sq. • a walk, a motion/movement, a journey

 $\mathbf{k\acute{u}n} - /\mathbf{k}_{A} n$ .  $pl. \bullet \text{ many walks, many motions/movements, many journeys}$ 

 $\mathbf{kyn} - /\mathrm{kin}/v$ . ind. • to walk, to move, to go

 $\mathbf{k\acute{y}n} - /\mathrm{kyn}/v.$  imp. • walk!, move!, go!

kan – /ˈkan/ a. pos. • in motion, moving, going, living

 $\mathbf{k\acute{a}n} - /\mathbf{k\acute{e}n}/ a. \ sup. \bullet$  moving the most, the most alive

ken – /'ken/ prep. • to, toward

#### K-F – Fantasy, Unreal, Fake

Antonym: "Thing, Real, Exist" See F-K

 $\mathbf{kuf} - /\mathbf{kuf} / n. \ sq. \bullet$  a fantasy, something fake/unreal

 $\mathbf{kúf} - /\mathbf{k}\Lambda f/ n. \ pl. \bullet$ many fantasies, unreal things

 $\mathbf{kyf}$  - /'kif/ v. ind. • imagine, picture

 $\mathbf{k\hat{y}f} - /\mathbf{kyf}/v$ . imp. • iamge!, picture!

**kaf** − /'kaf/ a. pos. • fake, unreal, fantasy, fictional

 $\mathbf{k\acute{af}} - /\mathbf{k\acute{cef}}/$  a.  $sup. \bullet$ the most fake, unreal, fictional

# M

#### M-K – Demonstrative, Thing

Antonym: "Query, What?" See K-M

muk − / muk/ n. sq. • this/that thing

 $\mathbf{m\acute{u}k} - /\mathbf{m} \wedge \mathbf{k} / n.$  pl. • these/those things

 $\mathbf{myk}$  - /'mik/ v. ind. • doing this/that

 $\mathbf{m\hat{y}k} - /\mathbf{myk}/v$ . imp. • do this/that!

mak − /'mak/ a. pos. • like this/that

 $\mathbf{mák} - /\mathbf{mœk} / a. \ sup. \bullet$  most like this/that

#### M-N – Entertainment, Fun, Game

Antonym: "Work, Task, Boring" See N-M

mun − /'mun/ n. sg. • a game, book, film, TV-show, play, etc.

 $\mathbf{m\acute{u}n} - / \mathbf{m} \mathbf{n} / n$ . pl. • many games, books, films, etc.

 $\mathbf{myn} - /\mathrm{min}/v$ . ind. • to play, entertain, relax

 $\mathbf{m\acute{y}n} - /\mathrm{myn}/v$ . imp. • go play!, have fun!

man − /'man/ a. pos. • fun, entertaining

 $m\acute{a}n - /men/a$ . sup. • most fun, entertaining

#### M-L – Soft, Weak, Clay

Antonym: "Solid, Strong, Rock, Metal" See L-M

 $\mathbf{mul} - /\mathbf{mul} / n$ . sg. • a soft thing, some clay, sand, paste, powder

```
múl - /mal / n. pl. \bullet many soft things, clay, sand, paste, powder <math>myl - /mil / v. ind. \bullet to soften, weaken, mould <math>mýl - /myl / v. imp. \bullet soften!, weaken!, mould! mal - /mal / a. pos. \bullet soft, weak <math>mál - /mel / a. sup. \bullet most soft, weak
```

#### N

#### N-M – Work, Task, Boring

Antonym: "Entertainment, Fun, Game" See M-N

num - /'num/ n. sg. • a task, job, craft, skill

núm - /'nam/ n. pl. • many tasks, jobs, crafts, skills

nym - /'nim/ v. ind. • to work, make, craft

ným - /'nym/ v. imp. • work!, maake!, craft!

nam - /'nam/ a. pos. • mandatory, boring, arduous

nám - /'nœm/ a. sup. • most boring, arduous

#### N-F – Like, Desire, Want

Antonym: "Dislike, Hate, Must" See F-N

nuf - /'nuf/ n. sg. • a desire, want

núf - /'nʌf/ n. pl. • many desires, wants

nyf - /'nif/ v. ind. • to like, desire, want

nýf - /'nyf/ v. imp. • like smth.! (special case:) exclamation of joy "wow!",

"yay!"

naf - /'naf/ a. pos. • nice, boring, arduous

náf - /'nœf/ a. sup. • most boring, arduous

F

S

Х

W

J

Ι

A

Ε

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Anhang C: Übersetzte Texte

# VARIOUS TEXTS & PASSAGES translated into the SUTLUN LANGUAGE

Some Lexicon Modes

By Samuel Pearce

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4 CONTENTS

# Chapter 1

# The North Wind & Sun

#### 1.1 English Text

The North Wind and the Sun disputed as to which was the most powerful, and agreed that he should be declared the victor who could first strip a wayfaring man of his clothes. The North Wind first tried his power and blew with all his might, but the keener his blasts, the closer the Traveler wrapped his cloak around him, until at last, resigning all hope of victory, the Wind called upon the Sun to see what he could do. The Sun suddenly shone out with all his warmth. The Traveler no sooner felt his genial rays than he took off one garment after another, and at last, fairly overcome with heat, undressed and bathed in a stream that lay in his path.

#### 1.2 Sutlun Romanised Text

Fusmapsut xel mapfalfuk nypet úkes muje. Kunjun nyket. Kunjun xylet falkul. Úk napsynet ene, jun lyk kunjune uwu, jun máj.

Fusmapsut jusytet awa, Kunjun jukylet uke. Fusmapsut eksytet. Mapfalfuk jufylet. Kunjun lyket ukes falkule.

Fusmapsut nymlunsytet ene, mapfalfuk máj.

## 1.3 Sutlun Orthograpy

- चिन्छ्याया । छन्ना स्थान स्थानस्था । छन्ना स्थानस्था ।
- । स्प्रा क्राप्ट : सहन हन्यन्य क्राप्ट क्राप्ट हन्य । स्प्रा अध्या अप्रा । स्प्रा अध्या अप्रा ।

- දු74. දූ74. අට දේ අව වේ යුව යුව වේ යුව යුව වේ ය වේ දු74 කුව දු74 කුව වේ යුව යුව යුව යුව යුව වේ යුව වේ යුව වේ යුව වේ යුව වේ යුව වේ යුව යුව යුව යුව යුව යුව යුව ය
- । छण्णुरुणन्दुनळ् न्रन्दुक्नवा । ज्ञान्नन्न नक्षात्रव न्र्यान्व ।
- । දුටය කුපළහල් වෙය කරනු පෙස්වෙන් කරනු වෙය : මුවල් වෙය කරනු වෙය ।

# Chapter 2

# The Tower of Babel

#### 2.1 English Text

And the whole earth was of one language, and of one speech. And it came to pass, as they journeyed from the east, that they found a plain in the land of Shinar; and they dwelt there. And they said one to another, Go to, let us make brick, and burn them throughly. And they had brick for stone, and slime had they for morter. And they said, Go to, let us build us a city and a tower, whose top may reach unto heaven; and let us make us a name, lest we be scattered abroad upon the face of the whole earth. And the LORD came down to see the city and the tower, which the children of men builded. And the LORD said, Behold, the people is one, and they have all one language; and this they begin to do: and now nothing will be restrained from them, which they have imagined to do. Go to, let us go down, and there confound their language, that they may not understand one another's speech. So the LORD scattered them abroad from thence upon the face of all the earth: and they left off to build the city.

Therefore is the name of it called Babel; because the LORD did there confound the language of all the earth: and from thence did the LORD scatter them abroad upon the face of all the earth.

#### 2.2 Sutlun-Ex Romanised Text

Sujfus xylet xam sutlun.

En fyket, úk niket jupem. Mukfusem úk myf ene, wamfus ((Sinal))es. Úk mukfusem jynet.

Úk sutlynet ene úkem, "úp týlej wamlume, úp jufýlej wamlume".

Úk xylet wamlume lumem, úk xylet wakmule wamlumem.

Úk sutlynet ene, "úp týlej julumxulfuse, úp týlej jumaplumxule, muk máp uwu, mukes mup fyk mapfusem".

Úk tyfet ene, sujjun syn ene, úk taf. Úk ektyfet ene, úk kas.

Mapfusjun niket, uk pyket túle junes.

Mapfusjun sutlynet ene, "sujjun xylet xam sutlun, úk fyk muke. Jusfuk xyt úkes túle".

Mapfusjun sutlynet ene, "úp pamkýnej, úp nalnýpej úkes sutlune, úp kýsej úke". Uk pamkýnet, uk nalnýpet úkes sutlune, uk kýset úke. en uwu, úk ektylet julumxulfuse.

En uwu, mukfus lynef ((Papel)), mukfusem mapfusjun nalnýpet sujsutlune, Mukfusem mapfusjun kýset sujjune.

#### 2.3 Sutlun-Ex Orthography

- । ନ୍ୟକୃଥ୍ୟନ ହୁଡାକଓଡ ହୁଏଭ୍ର ନ୍ୟର୍ପକ୍ୟଇ ।
- । යත දුගතු : බහලයන මුපල්පුතුවකු වූ කුපල්පුවක් කුප් : නගල යත । කුපල්පුවක් වූ කුරු සුගපුවක් යත ।
- eargo අයන දුග්නුපටකුය ≡। යුගු ශ්රා පෙදෙ දුග්නුපටකුය ; යුගු । යුගු අතග+ගෙකගෙ බෙත යුගුබෙනු := तුගු ග්රා පෙදෙ දුග්නුපටකුය ; तුගු
- දුගල පටගු දුගල පටගු පටගුයක් : යුගු ළඟ පෙගෙ දුග්ගුවු පටගුනු : යුගු ළඟ පෙගෙ දුග්ගුවු පටගුයුව : යුගු ළඟ පෙගෙ දුග්ගුවු පටගුයුව :
- । नुरा क्रम्यस्थाप्त क्रम्यस्थाप्त क्रम्य स्थाप्त स्
- යතුග යකය : සානූ තුය । යා තුය යකය යකය යකය යකය යකය । වූතු
- । කුගනුදුට වෙස්ස් කරනුවන් : යනු නුගනුවන් යෙසුදුවෙනුව ।
- । തුଏගුළිට්පදිටක පටග්පරාකයග යක්ප 🗄 වටදිදුටක ළුරාපයග ළුරුමු පටග්පටක
- । ਜ਼ਾਹ දුරගු නුපහුය । ඉපළවුන් ළගග ਜ਼ਾਹੂਰਣ ගਜ਼•ਤ ।
- i නග්යුවක් සටග් හුරු දෙවන් හුරු වූ : වනු හුරා වූ : වනු හුරා වූ : වනු හුරා වූ : වනුරු ව
- । न्या छण्या । उक्र त्रभुन : न्या उक्षण भुनभुन्य । न्या छण्या । न्या ।
- தුවතය । කਪಕකආගුයග පටමුදුවෙය : කුටගුළට දෙවක කුගලුදට දෙවක ගුගුදට දෙවක । යක ටඡට; කුටගුළට දෙගකදෙ ((ගුගුලෙනා : කුටගුළට දෙවක කුගලුදට දෙවක

Anhang D: Arbeitsprotokoll

# Language Creation Journal

# Samuel Pearce

# December 1, 2021

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#### 1 Introduction

When I set out to create this language, its main goal was to be as small as possible, in the sense that there were very few vocabulary to learn. At first, I figured I might attempt this by simply limiting the number of words to an arbitrarily small set and then see how useful the language was, and what might need to be added to make it useful in daily life. Soon though, I realised that making it nearer to a polysynthetic language with many uniform morphological derivation strategies, I could define an extremely limited set of roots and then expand them easily with well defined rules. This is the base idea which influenced much of the grammatical decision making.

#### 2 Log Entries

## 2.1 Tuesday 5<sup>th</sup> of October

This is the day I first began developing the language. I had already had a few thoughts about what sounds I wanted to use and the general structure of the grammar, but this was the first day I put it into writing. I began by outlining which sounds I wanted to use. I eventually settled on an extremely regular set of twelve relatively easy-to-pronounce consonants (with suitable allophones, in case) and seven vowels laid out in three pairs of rounded-unrounded vowels and the schwa. I set out a romanisation which would emphasize the paired nature of the sounds and set to work coining the first couple words to test their various inflections. Here I first laid out the biconsonantal root system where the vowel corresponds to the part of speech (Noun, Verb, Adjective) and defined how the roundness-umlaut changes each of these. I also defined the cases and their suffixes as well as which tenses would be available and their respective tenses.

# 2.2 Friday 8<sup>th</sup> of October

During the week I made a few additions, such as the basic personal pronouns and a couple new roots to make more test sentences and I thought about what other suffixes or prefixes I could add to allow for more derivations. I also began defining how to ask questions.

#### 2.3 Saturday 9<sup>th</sup> of October

On this weekend, my two friends who were volunteering to help me test out the language's applicability visited for a couple days during which we made a few changes to the language. The vowels all shifted somewhat to make them easier to produce and distinguish for us. I taught them the basics of the noun classes and tenses and we made a few sentences to test their knowledge and to see if they had any suggestions. We solidified how to ask for information as well as binary questions. We also defined a few general inflections, such as the augmentitive and diminutive prefixes which are very handy for deriving new words. We spent a while discussing whether or not to define a way to set the aspect of the verbs, but determined it not really useful enough for now. I also wanted to get a foundation of the writing system defined and asked my volunteers for some suggestions of what æsthetic direction to move in.

#### 2.4 Thursday 21st of October

I had some free time at work and spent a good portion of my afternoon documenting all the features of the language and ensuring that they were unambiguous. I went through the whole adjective inflection system, defined how to mark noun definitiveness, and even got the basics of different clauses worked out, so that conditional sentences and conjunctions could be used. Though these weren't fully fleshed-out by the end of the day, I could already make some pretty complex sentences like:

"Up kiñ kuñfuke utem, up nif muk, ut ñik taf puxe upem."
Which means:
"I give you some money, because I want you to get me good food."

Though the phrases were still quite poorly defined, and this particular example made the need for unambiguous prepositions very clear.

# 2.5 Sunday 24<sup>th</sup> of October

On this day, I spent some more time working on the documentation of the language, and also finally decided to remove the "eng" sound from the language as it was too difficult to differentiate, especially in onset position. I also defined how prepositions were going to work after realising the other day how ambiguous they could be. Additionally, I spent some more time refining the glyph designs for the writing system and began attempting to create a font for it.

#### 2.6 Friday 30<sup>th</sup> of October

Here, I had some overtime built up and had to get rid of it by the end of the month, so — given I didn't have any tasks for my at work — I was allowed to take the rest of the afternoon to work on my VA. During this time, I continued transferring temporary notes which had been tested and worked in the language to the grammar document. This mainly included newly coined words. I also tried translating "The North Wind & The Sun", a commonly used fable for conlang translations, which lead to the dicovery of many problematic ambiguities. I didn't manage to get very far in the translation as I spent most of the time given working on ironing out these troublesome concepts.

#### 2.7 Monday 1<sup>st</sup> of November

Given my next task at work wasn't ready for me to work on, and there weren't any other tasks available, my boss allowed me to work on the VA for a period instead of work. I used this time to go through all the areas that were unclear or not yet documented and I tested them out while adding them to the grammar document so I could at least have it concretely documented. The ideas I went through included basic conjunctions with some extra prepositions,

#### 2.8 Tuesday 2<sup>nd</sup> of November

On this day, I tried making some more progress with "The North Wind & The Sun". Most of time was spent trying to find unambiguous ways of representing

more complex topics than the few roots alone could. I also was in contact with one of the volunteers to test out various compunds and phrases to see how easy they were to understand.

#### 2.9 Wednesday 3<sup>rd</sup> of November

Here, I decided to reorganise the dictionary and work in the use of multiple small languages for testing purposes finally. I realised that I could easily create a scale of dictionary sizes with each one being larger than the last up to a certain maximum. This meant I could test different language scales within the framework of a single language, while simultaneously making it easier to learn by splitting it into easy-to-learn chunks, each building on the previous. I began working on reducing the set of words I had to the lowest language mode, M0, while using an online system to document them and how each is reduced to fewer, more ambiguous roots, or more, clearer roots. For the numbering/naming convention, I decided each group of four words would be represented by a number increasing steadily. So the the smallest version of Sutlun with any roots is Sutlun M1 with 4 roots. Sutlun M2 has 8 roots, and so on until M25. I also refined the set of grammar rules down to 7 simple rules, while also making the prefixes less ambiguous. I tried teaching my parents some of the grammar to see how easy it was.

#### 2.10 Tuesday 9<sup>th</sup> of November

On this day, with free reign to add as many words as needed with the reassurance that I could simply cut them out of the smaller lexicons, I resolved to finally finish translating "The North Wind & Sun" fable. I practiced writing it using my custom made writing system and added any new words I'd coined to the dictionary I was keeping. Though this didn't mean the language was complete, it was a landmark and a test of the grammar I'd made which I only needed to lightly tweak to work with the story. Once I try translating a few more texts, I should be able to vouch for the language's usability and can commence trying it out with my test subjects and an even larger text, only maybe needing to add words as seems fit.

#### 2.11 Tuesday 16<sup>th</sup> of November

Here, I had to present the status of my VA to the class. Though I didn't actually have to present it, I still had to prepare a presentation, which I did eventually actually present. In it, I was able to look back and reflect on the progress so far. I was quite happy with how much I'd done, but felt I'd been slacking in the past week and needed to invest some more time this weekend. I began searching for a suitable larger text to translate as that would be the next big step in the whole project.

#### 2.12 Saturday 27<sup>th</sup> of November

On the weekend, I decided I wanted to overhaul the grammar document, because I had not updated it for a long time given that I wanted to develop the language more before writing everything down to save time. So, now that the language

was much more well-defined, I sat down to go through the whole grammar and update it to reflect any new changes and to add better example-glosses. One of the biggest challenges I ran into while translating and adding new words was that I had made every word have an antonym, which helps greatly with derivation, but makes it quite a pain when I have try to find a way to, for example, say "table" which only uses words which can have an opposite.

#### 2.13 Wednesday 1<sup>st</sup> of December

On this day, with the project deadline looming ever-closer, I focussed on just getting the text translations complete so I could start working on the final document I'd actually have to hand in. On this day, I worked on and finished the translation of "The Tower of Babel" tale and was quite pleased to see that I only had to add two or three words. After that, I considered the language done for now and sent the text to my two volunteers to try to translate. I didn't tell them what the text was and left them to try their hand at it. This way I would be able to get an idea of how ambiguous the words were.

Anhang E: Urheberrechtserklärung

## 1 Bedingungen

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2 Unt	terschrift				
Samuel P	Pearce	Datum			