

# Preserving and understanding the Medefaidrin language

of the Obieri Okaimε ('Church freely given') Ibibio community

**Eno-Abasi Urua**  
University of Uyo  
PMP 1017, Uyo  
Nigeria

**Dafydd Gibbon**  
Universität Bielefeld  
Pf 100131  
D-33501 Bielefeld

WOCAL 6, 17-20 August 2009, Köln

# Overview

- Approach: Documentary Linguistics
  - documenting
  - preserving for posterity
  - not focussing on maintenance
- Domain: “spirit language”, Medefaidrin
  - created, developed, used by adherents of Oberi Okaime religious group (Itu and Ibiono Ibom Local Government Areas, Akwa Ibom State, Niger Delta region of Nigeria)

# Methodological orientation

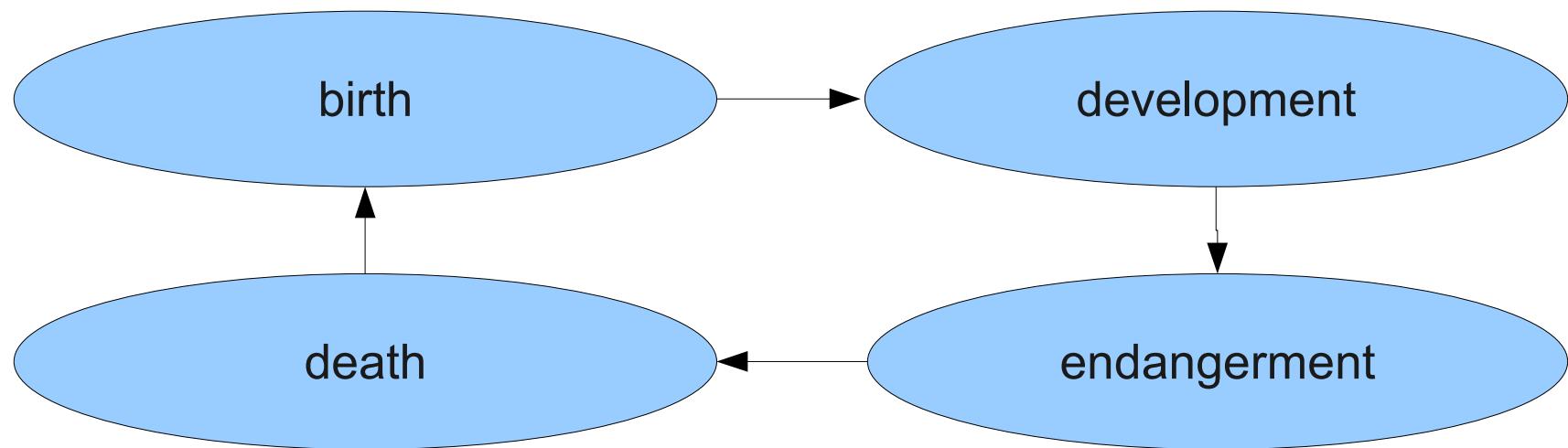
# Research Programme

- Documentary Linguistics:
  - the theory and practice of modelling re-usable empirical language documentation on a solid text linguistic and computational basis.
  - Documentation of speech and writing
  - Specification of markup and database requirements
- Contribution of Speech Technology:
  - New speech synthesis technique of microvoice modelling to verify the correctness of phonological and phonetic representations of the language

# Methodological framework

Within the Language Documentation paradigm:

- we make the cyclic property explicit
- by adding the phase of language birth



# Methods

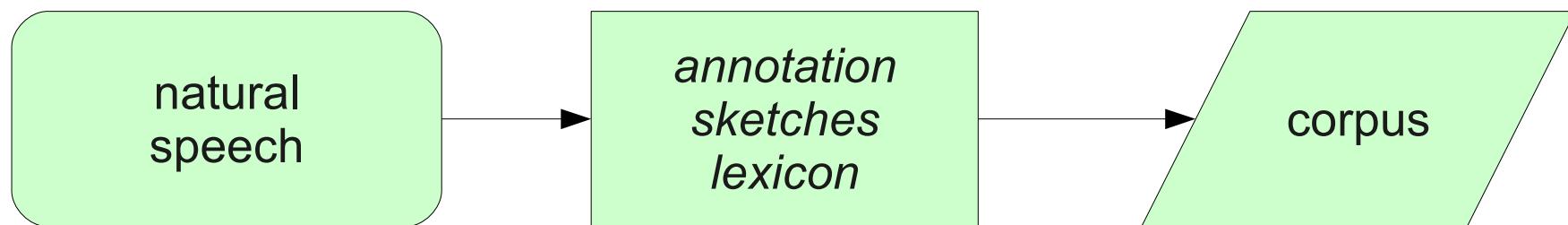
- Documentary Linguistics:
  - recognised subdiscipline, emerging from
    - General and Computational Linguistics
    - Speech & Language Technologies
- Use of speech and language technologies:
  - Consumer methods (technology as a convenience):
    - word processing
    - database management systems
  - Instrumental methods (technology as *sine qua non*):
    - text: concordance software
    - speech: annotator software (Praat, Transcriber, WaveSurfer, Elan...)
  - Heuristic use (technology as *sine qua non*):
    - text: operational computer linguistic models: parsing, generation
    - speech: phonetic analysis, speech synthesis

# Documentation of speech and text

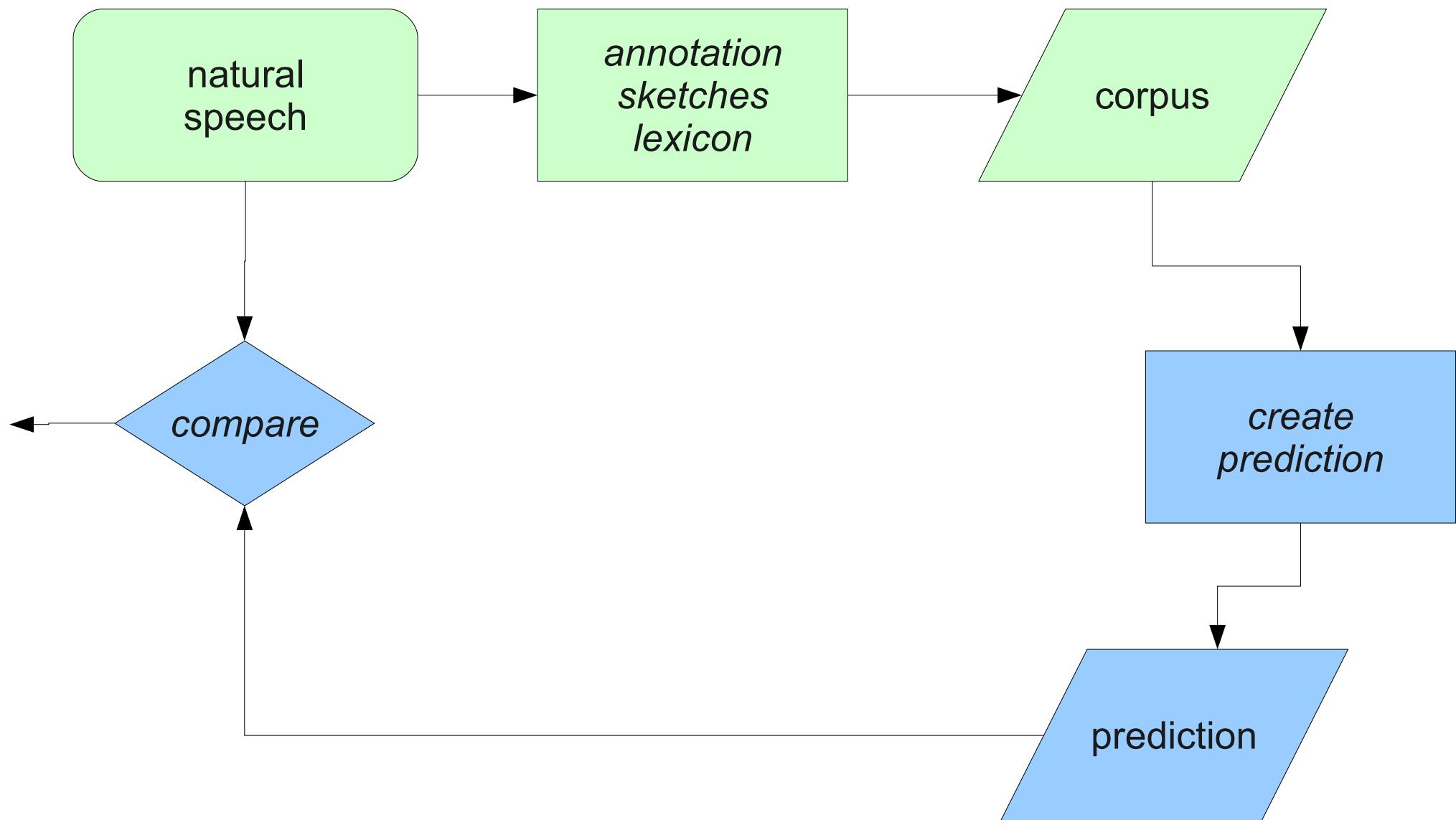
Type	speech	handwriting	print
Durability:	volatile	durable	durable
Production time:	fast	slow	fast
Error handling:	online error handling	arbitrary time editing	arbitrary time editing
Word definition:	fuzzy boundaries	clear boundaries	very clear boundaries
Medium:	parametrically modulated one-dimensional acoustic time function	colour modulated two-dimensional visual space function	colour modulated two-dimensional visual space function
Data size:	Very large	Paper or very large bitmap graphics file	Paper or very small file, (large if with embedded bitmap graphics)
Legal status:	unclear, requires ad hoc approval	clear ownership	clear copyright
Semiotic status:	continuous signal	continuous signal	discrete symbols

Based on Gibbon et al 1997; 2000

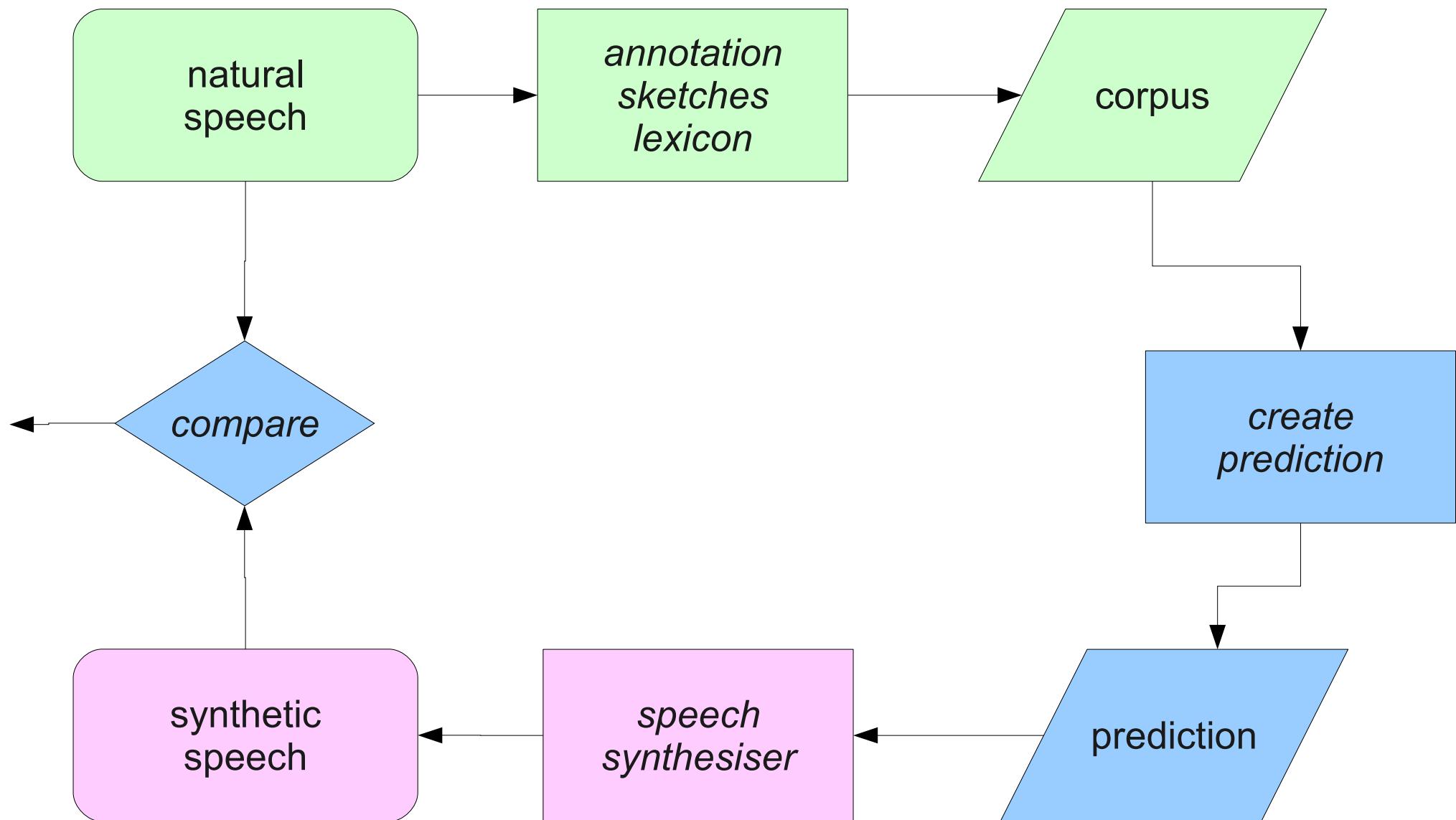
# Theory development & validation cycle



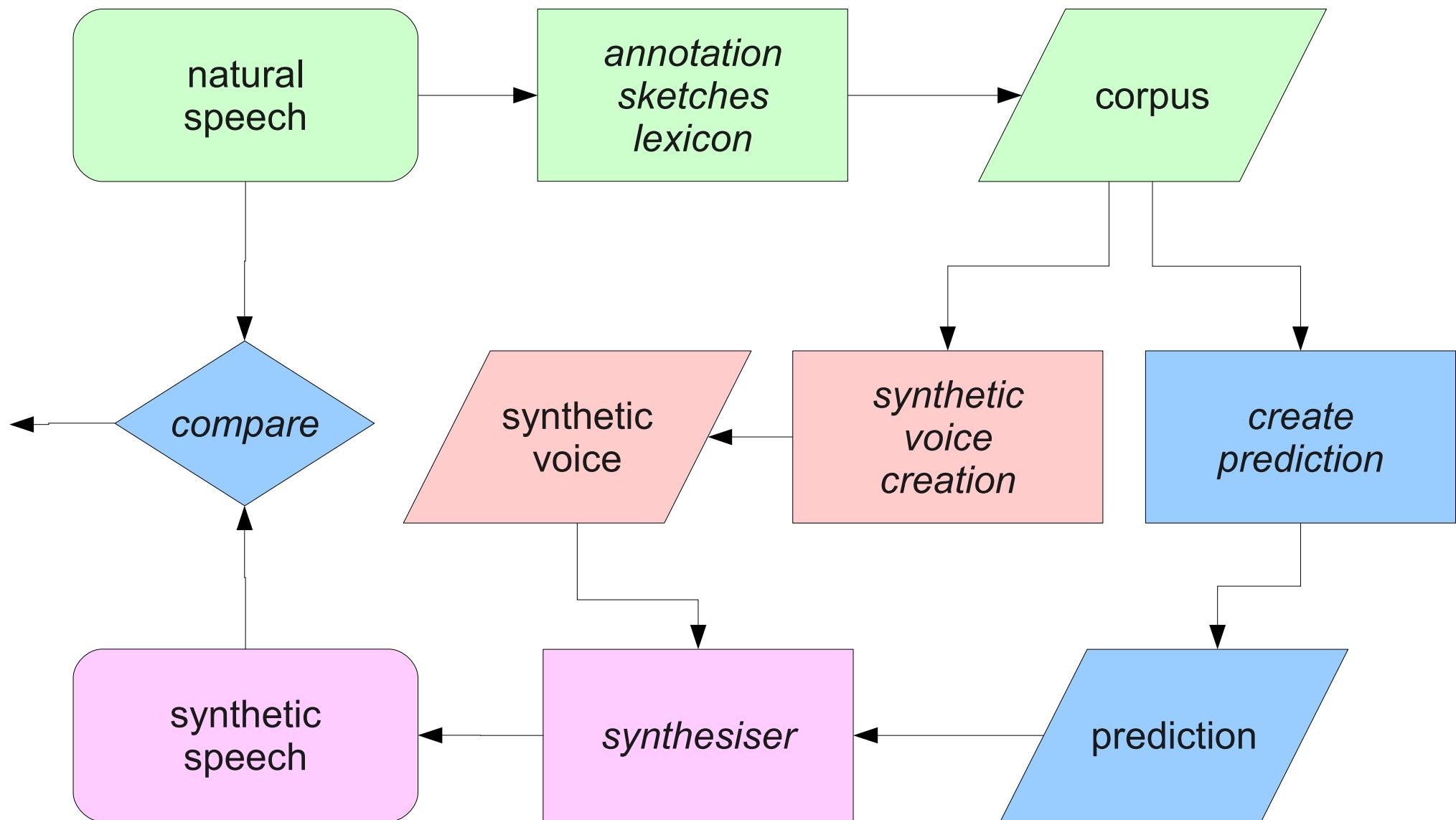
# Theory development & validation cycle



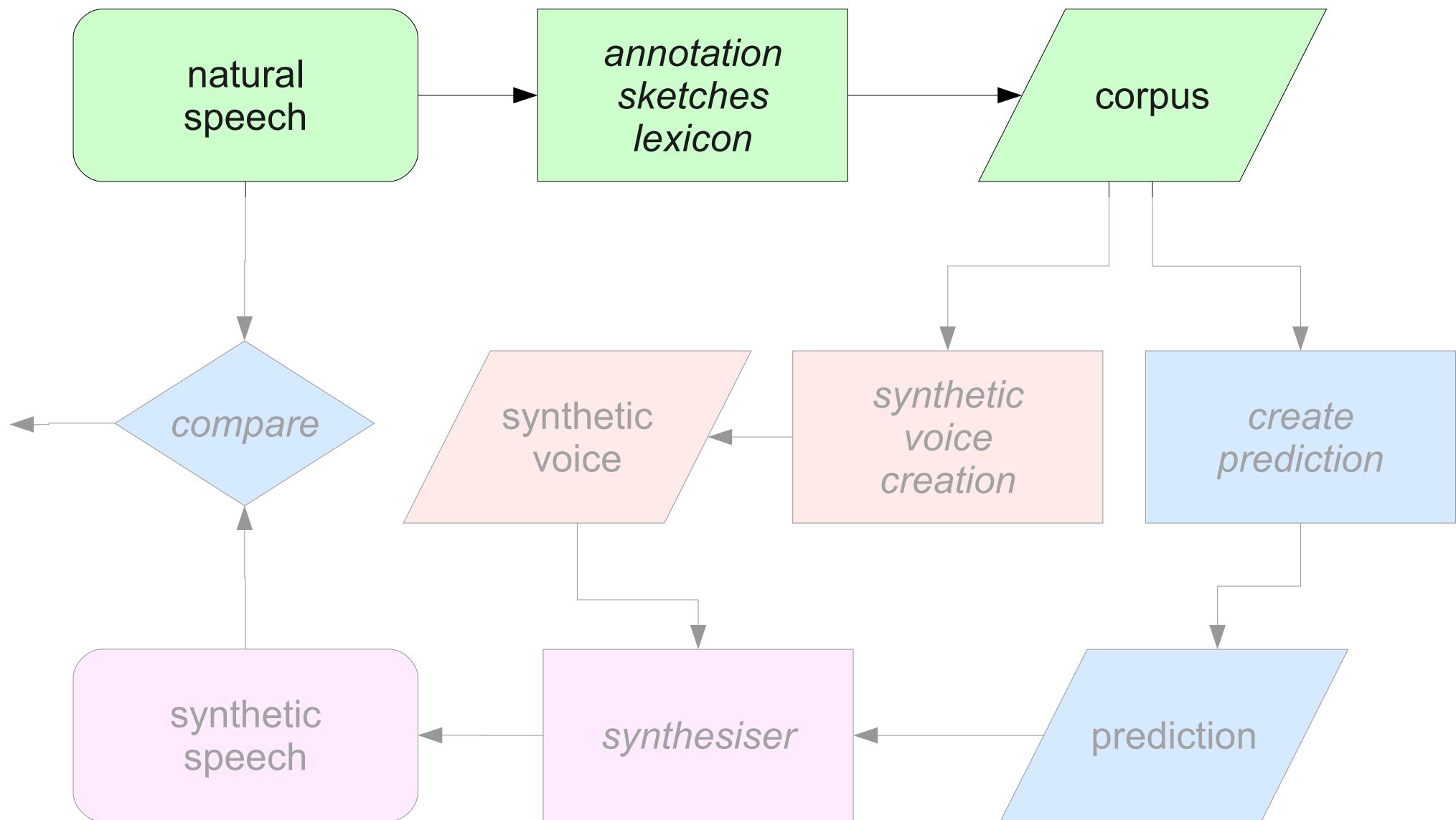
# Theory development & validation cycle



# Theory development & validation cycle



# Theory development & validation cycle



# Domain of study

# Medefaidrin language, script, speech

- Community:
  - Ibibio speakers, since around 1927
  - Christian sect Oberi Okaime ‘Church freely given’
  - persecuted by authorities in 1930s
- Not simply a register or functional style of Ibibio:
  - distinctly different from Ibibio
  - artificial special purpose language
- Motivation for development of Medefaidrin:
  - Wish for distinct variety of Christianity suited to Ibibio
  - ‘secret language’ vs. colonials & compatriots
- Now in danger of disappearing

# The Oberi Okaime community

## Situation of the language

- Ibiono & Itu Local Government Areas, Akwa Ibom State, Niger Delta region of Nigeria.
- Initiated in 1927
- Not ‘filtered by the language universals of children’
- 1<sup>st</sup> language of Medefaidrin community is Ibibio (Benue Congo > Cross River > Lower Cross)
- Used in formal situations:
  - religious ceremonies
  - formal communications
  - taught in community school
- Highly endangered

# Timeline

1927: Inception of the language by Ibibio speakers

1930s: Further developments

- Oberi Ofaime script for Medefaidrin
- Research at International African Institute
- Investigation by colonial authorities

1983: Ibibio orthography

- Linguistic work of Okon Essien
- Akwa Esop Imaisong Ibibio (sociocultural organisation)

Now: revival of interest in schooling children within the community

# Location: Akwa Ibom, Nigeria

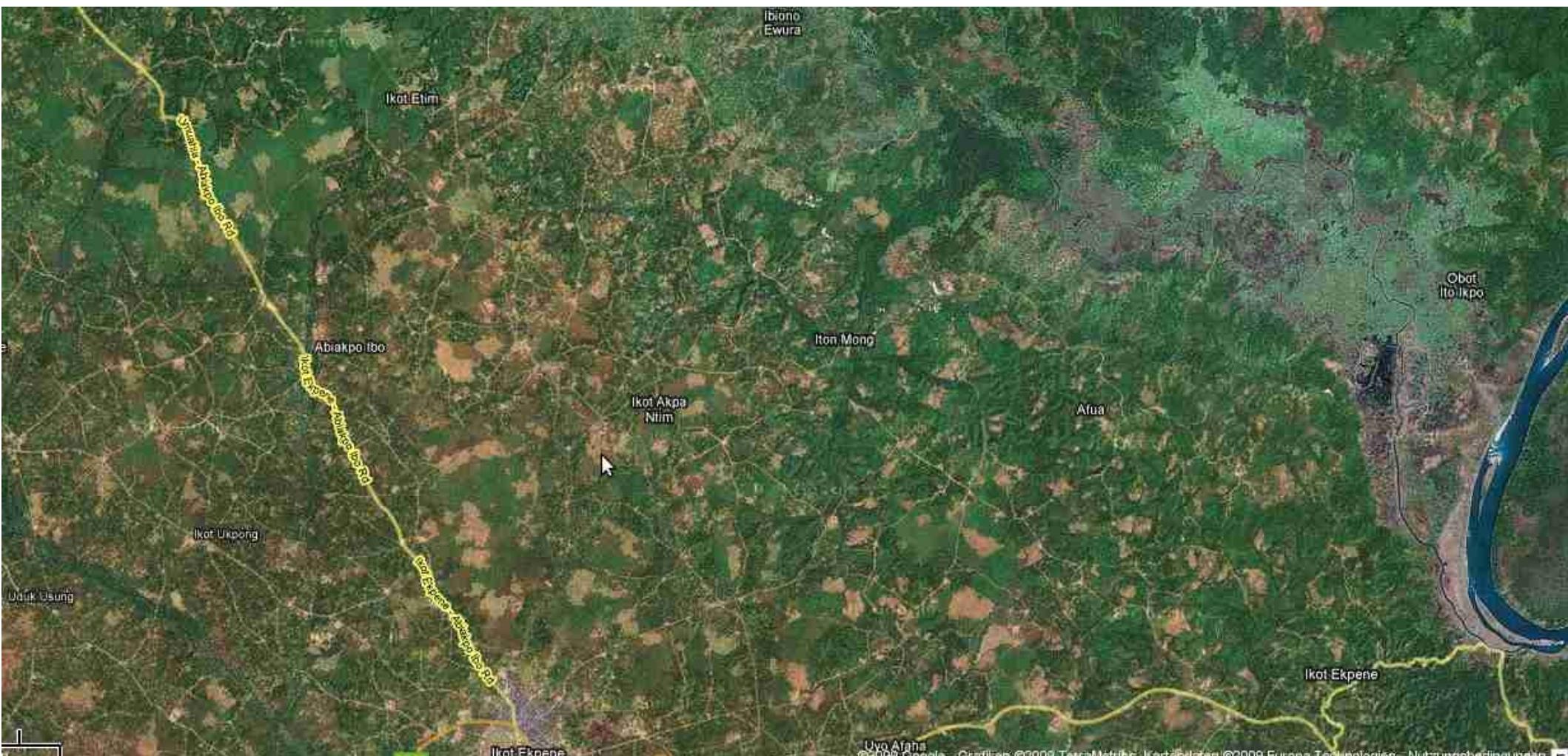


# North-East of Ikot Ekpene

- Headquarters near large town (Ikot Ekpene)



# North-East of Ikot Ekpene



# Data

# Data media and treatment

- Texts hand written on notebooks:
  - late 1920s
  - severe wear and tear
  - no resources available to Oberi Okaime group to preserve their language
- Salvage operation:
  - Scans: written texts
  - Recordings: Audio and video: cases of language use, especially religious & pedagogical contexts.
  - Ethics: Payback with dictionary, primers for teaching the language to learners, etc.?

# Data: fieldtrips

- Several fieldtrips:
  - Edem Urue
  - Ididep (Ibiono Ibom LGA, Akwa Ibom State)
- Main informant:
  - Richmel Ekit
- Scenarios:
  - Worship, ceremonial sessions, language lesson
- Media:
  - Audio, video
  - Text + translations (short stories, Richmel Ekit)
  - Translations typed, (handwritten) text scanned
  - later typed and saved in a computer.

# Data: texts

- Oldest surviving expert roughly 90 years old
- The documents in the script:
  - grammar and mathematics
  - handwritten on ordinary exercise books
  - in extreme danger of disintegration
  - no typewriters capable of writing such a script at the time – and no typewriters, period.

# Data characterisation spec: function

Type	speech	handwriting	print
<b>Style:</b>	informal ... formal	informal ... formal	formal
<b>Ilocution:</b>	less committal	more committal	committal
<b>Politeness:</b>	broad scale	less broad scale	least broad scale
<b>Perlocution:</b>	direct	less direct	least direct
<b>Precision:</b>	fuzzy	less fuzzy	least fuzzy
<b>Identity:</b>	indexically situated	less indexically situated	least indexically situated
<b>Deixis:</b>	situated	less situated	least situated

*Based on Gibbon et al 1997*

# Source: notebook

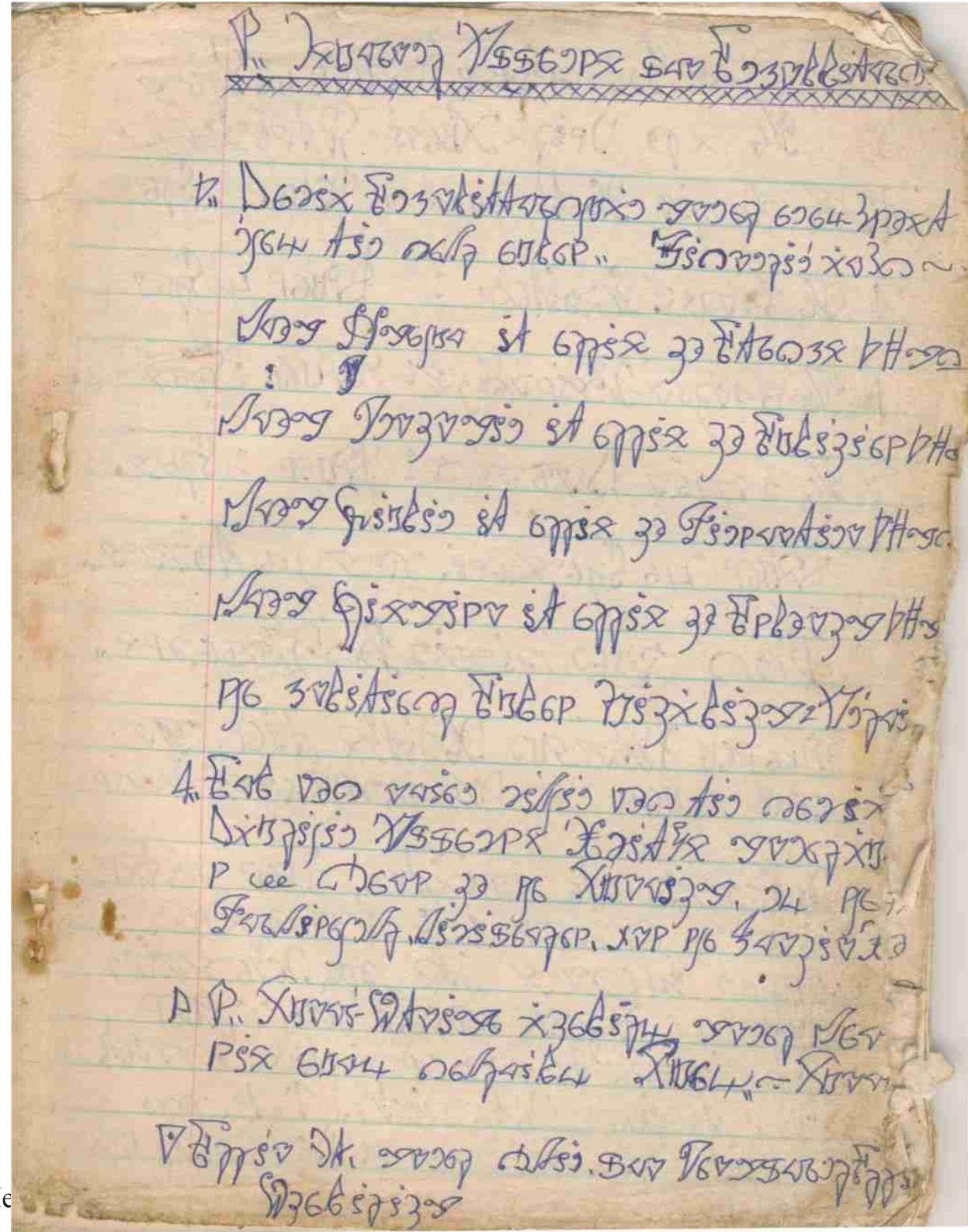
## Medefaidrin

### Numbering (instructions)

### Scan Unprocessed

17-20 August 2009, Cologne

Me



# Source: notebook

# Medefaidrin

# Numbering (instructions)

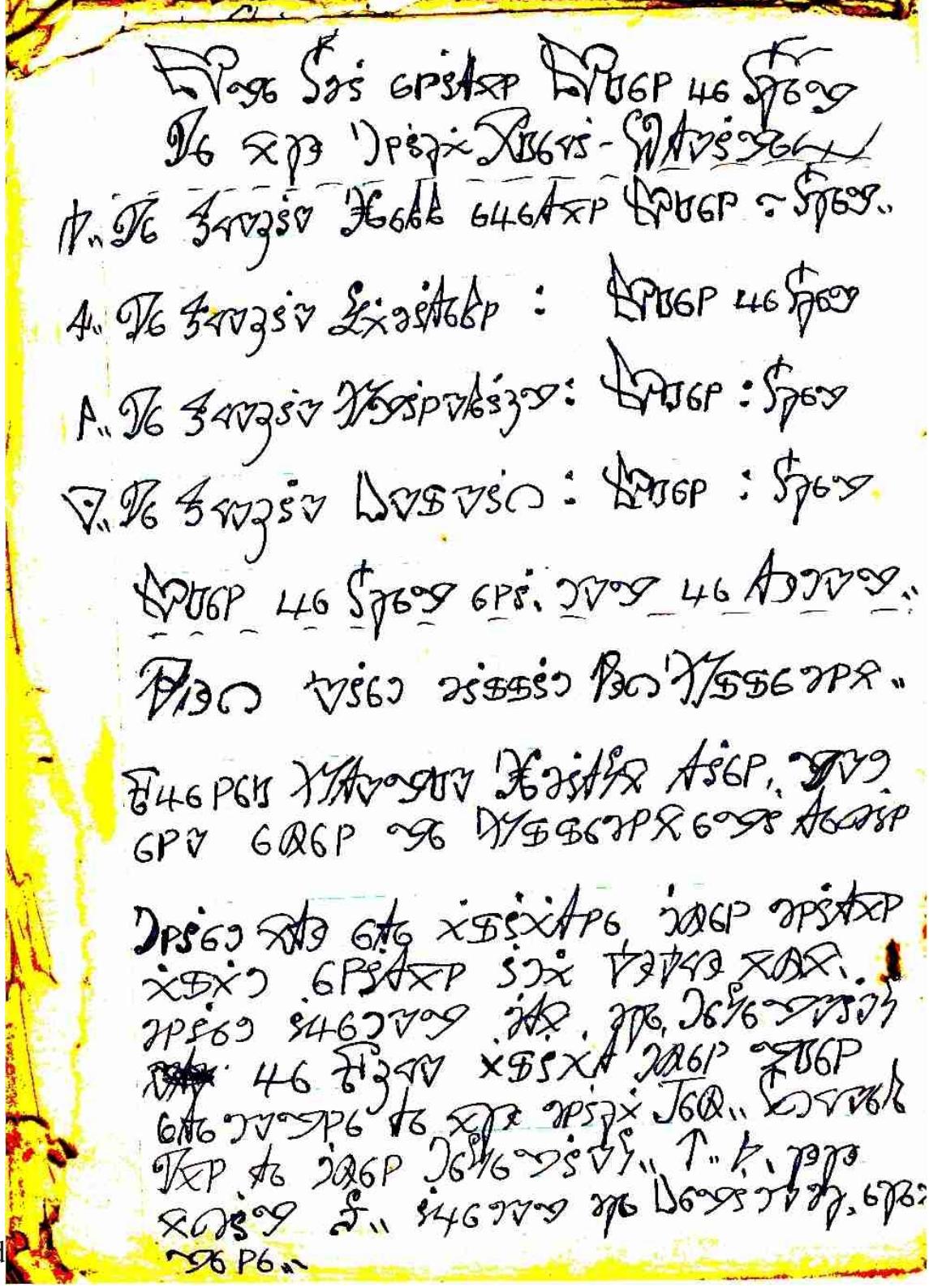
# *Scan Contrast enhanced*

# Source: notebook

# Medefaidrin

# Numbering Tabulation Arabic-like number 46

# *Scan Contrast enhanced*



# Source: notebook

# Medefaidrin

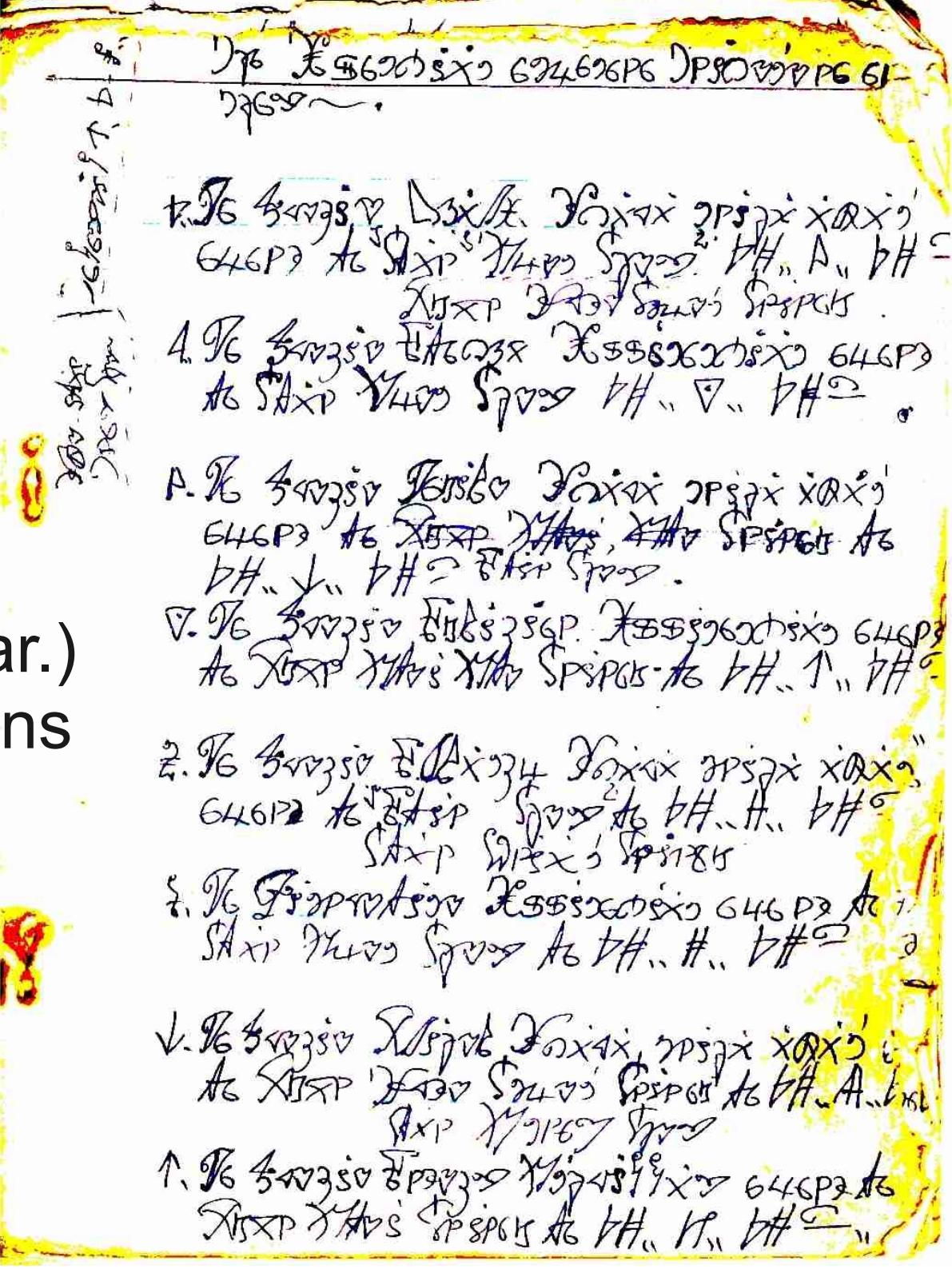
# Mefaidrin marginalia

# Numbering

# Name list? (cf. 1<sup>st</sup> char.)

# Several flat/sharp signs

# *Scan Contrast enhanced*



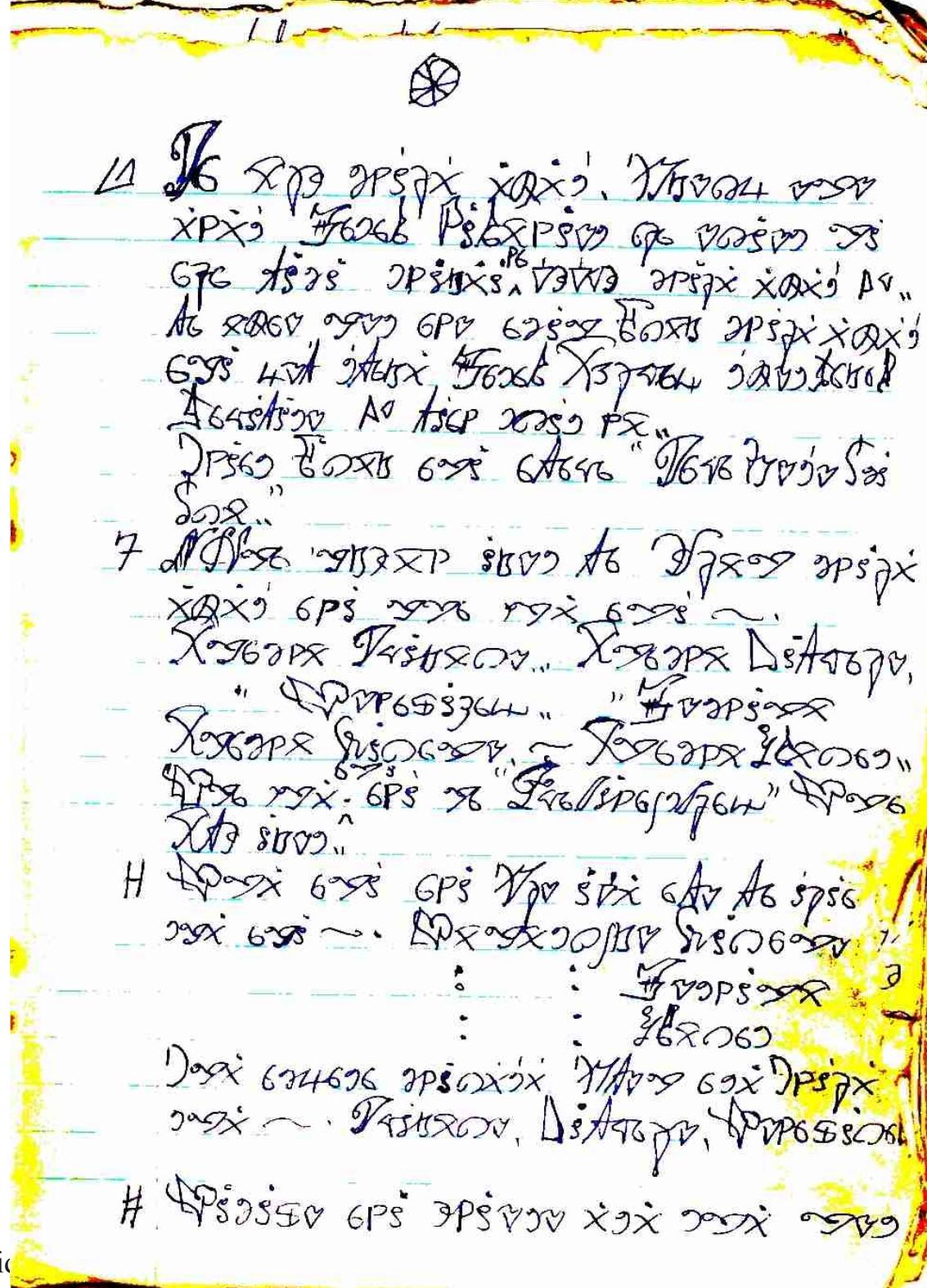
# Source: notebook

## Medefaidrin

### Numbering Tabulation

#### Margin note: circled asterisk

#### Scan Contrast enhanced



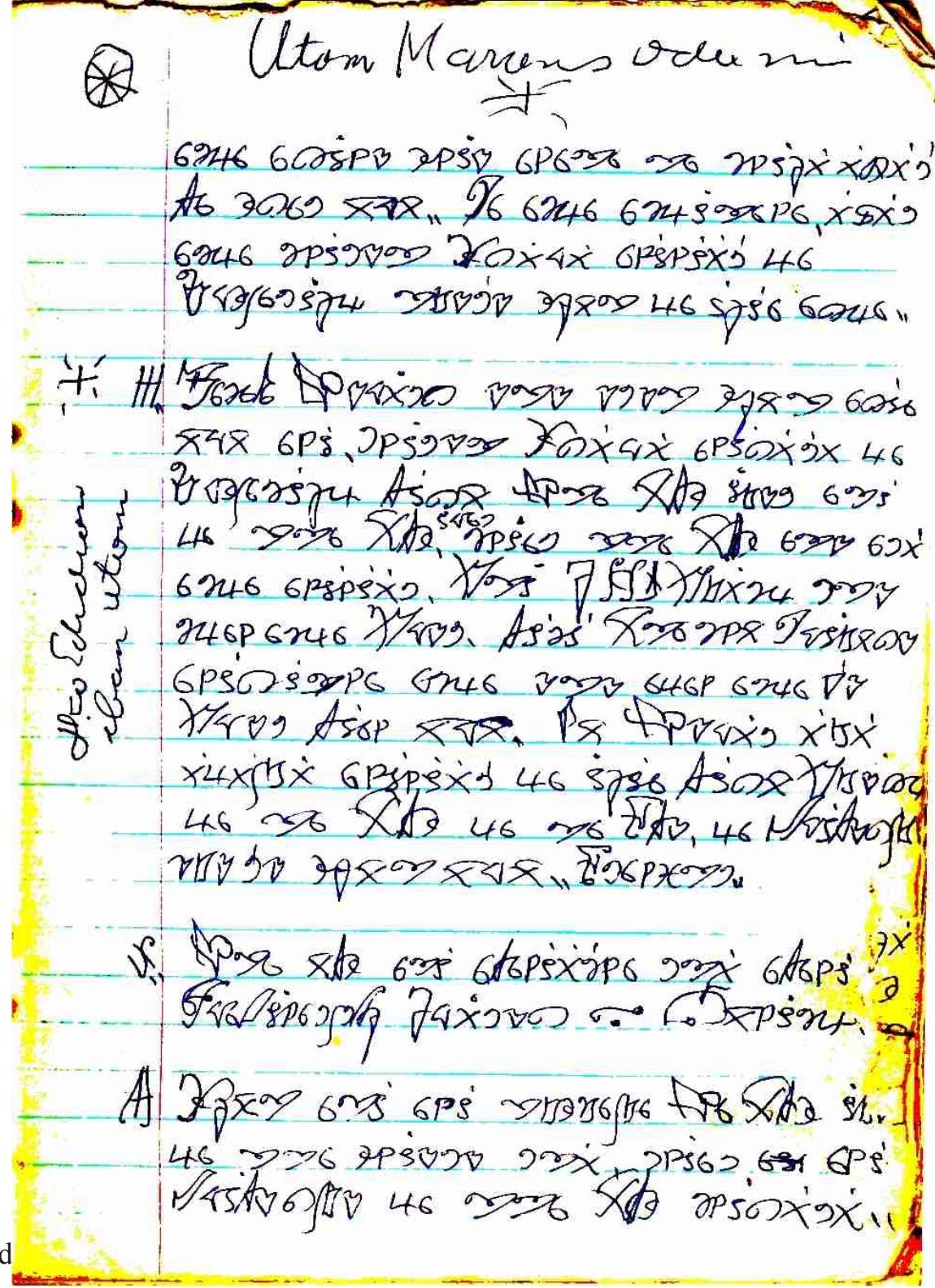
# Source: notebook

## Medefaidrin

Ibibio marginalia  
“Work be here”  
“Women work”

Numbering  
Arabic number 46

Scan  
Contrast enhanced



# Source: notebook

# Medefaidrin

# Numbering

# *Scan Contrast enhanced*

17-20 August 2009, Cologne

Medefaidrin -

# Source: notebook

# Medefaidrin

# Numbering

# Ibibio translation (about the duties of female assistants)

# *Scan Contrast enhanced*

7. Kabana mudiana eha iban emi edide me ibon Atam kini emi ekwöröde iko ema, ye ke me ini ebene Atam. ye me Capritrentor, e mo enyene ndiwut idem mö kiso Ifjöt Abasi, enyuri ebuk nte mö ekesanade ebo Abasi utom oro, me edi ofuri Muritenej' Abasi ekemek mö eno utom oro, ke ema ekup eyesin iko

Source: notebook

Medefaidrin

Numbering

Ibibio translation /  
commentary

"Kerinzula 'Bible'"

Scan  
Contrast enhanced

owu kiet kiet ke inwed. Ke ntne  
ke edino' mo nkpəp emi asanade  
ye item abana itie utom mö. mi-  
dige ntne Ami ndiyakke ufo owo  
torro skere öbön Akam ke ufo  
Abasi, ibohök ke ke ini Akam  
afuri ufo ke enye enyene ndi  
tene mböön Akam, me ndiböön no  
Abasi, mbaná idem esie "Koro ikö  
ödöhö ete" enie idem enie Akam"

4 Kasuk ntne ke me eka emi eyetde  
ndito ñwöñ idem, mikpö Eka eyetim  
ewut ufo Abasi mo ore edotde  
ke utom ore. Ke ntne eyeda  
emyin me aka idim rikekoi mön  
man mo edionö idaha mö ke ke  
utom nfpri ndito.

5 Odot mö enyene inwed Nda ksun emi  
edide 'Kerinzula' Bible, man mö  
eda ehvi itam itie me eka ke  
eset tutu emi.

# Letter (source: Adams)

1884 Adams  
Xmas 1884  
Wish you all  
the best of luck  
for the new year.  
P  
1884 Adams  
Xmas 1884  
Wish you all  
the best of luck

1884 Xmas 1884  
Wish you all  
the best of luck  
for the new year.  
1884 Xmas 1884  
Wish you all  
the best of luck

1884 Xmas 1884  
Wish you all  
the best of luck

1884 Xmas 1884  
Wish you all  
the best of luck

1884 Xmas 1884  
Wish you all  
the best of luck

1884 Xmas 1884  
Wish you all  
the best of luck

1884 Xmas 1884  
Wish you all  
the best of luck

# Analysis

# Procedure

- Orthography:
  - Characters:
  - Identify, inventorise and encode characters.
  - Make concordance.
- Speech:
  - Recordings (audio, video)
  - Transcription, annotation
  - Letter-to-sound relation
- Lexicography:
  - Identify, inventorise and encode words.
  - Make concordance
- Translations

# Orthography, alphabet (Source: Adams)

w	dy	or	g	short	i	z	n	e
ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ
s	a	ri	ya	li	be			
p	s	ɛ	ʌ	ə	ɔ:	ɜ		
dɛ	fɛ	kai	o	vɛi	mɛ	si		
tɛ	ɛ	x	ʃ	f	ɸ	θ		
tɛ	u	dyu	pik	atyu	kpi	kwo		
ɛk	nɪŋ	eksi	ai	dyai	k	h		
ue	ju:p		ɛsɔ		ɸɛ:g			
or	djat=at	ses =	is	dei=the				
variants:-								
z,	dy or G,	O,	me,	pik,	K			

1	ɔ	ɔ	-	ɔ	ɔ	
kreyo-w	dy or g	short i	z	n-en-n	e	
h	W	J	G	-	§	
ses-s	ɔ	short a forward	ri	ya	li	
ɸ	P	F	T	X	V	
be	de	fe	very long kai	o	vɛi	
ɛ	-	-	-	-	h	
me	si	tɛ	u	dyu:u	pik-p atyu	
▼	ɛ	ɛ	ɔ	ɔ	ɸ	
kpi	kwo	ɛk	nɪŋ	eksi	ai	dyai
F	-	-	-	-	2	
k	h	aepin	comma, vocative: oh		1	

# Numerals (Source: Adams)

1	airi	A	is fingo	1	edipikn
2	greid	B	16 ticket	17	edipa:ri:d
3	se:ta:	C	17 liget	1H	editrita
4	aidu	D	18 kisan	1H	edikanapt
5	džit	E	19 si:tri:k	1H	editaigi
6	tarisi	F	20 edi:tis	1X	editudipt
7	fuda	G	21 ediari	1A	edifingga
8	citia	H	22 edigreid	1H	editict
9	pikn	I	23 edisc:ta:	1f	edihiget
10	pa:ri:d	J	24 ediaidu	1f	edikisan:i
11	trita:	K	25 edidžit	1E	edis:tri:k
12	kanapt	L	26 editarisi	40	kreido
13	faigi	M	27 edifuda	40	setado
14	fudipt	N	28 editia.	10	aidudo
		O	100 džitdo		

P. മാർക്കസേൻ സിന്റ കോ ചീഷ്ടാന്ത്രിക് യൂഡോ. 7

ചർ നിലമിത്ത് ഏറ്റവും പുതിയ വിജയാഖാനം ദിവസം. ഏ അപേക്ഷാക്രമം  
മുൻപെ, എടുത്താണു മുൻപും ഉംഗ്രഹിത് ഒന്നും അഥവാ.

മദ്ധ്യകാല അഞ്ചു വിജയാഖാനം ദിവസം 2.

4 വിനോദസംഭവങ്ങൾ നിരുദ്ധീകരിക്കുന്ന അ ബിൽക്ക് നിരുദ്ധീകരിക്കു  
മുൻപും ദിവസം. എന്ന അനുശ്രദ്ധ അംഗീകാരം ലഭിച്ചു.

5 ചീഫ്സിംഗ്സിന്റെ അംഗീകാരം അംഗീകാരം അംഗീകാരം  
മുൻപും ദിവസം. അംഗീകാരം അംഗീകാരം അംഗീകാരം.

6 ചീഫ്സിംഗ്സിന്റെ അംഗീകാരം അംഗീകാരം അംഗീകാരം  
മുൻപും ദിവസം. അംഗീകാരം അംഗീകാരം.

7 ചീഫ്സിംഗ്സിന്റെ അംഗീകാരം അംഗീകാരം അംഗീകാരം.  
അംഗീകാരം അംഗീകാരം അംഗീകാരം.

8 ചീഫ്സിംഗ്സിന്റെ അംഗീകാരം അംഗീകാരം അംഗീകാരം.  
അംഗീകാരം അംഗീകാരം.

9 ചീഫ്സിംഗ്സിന്റെ അംഗീകാരം അംഗീകാരം.

# Medefaidrin language structure

Comparable to natural language structures

- there is a phonological system (sounds)
- orthography
- morphological system (nouns, verbs, adjectives, prepositions, interjections, etc.)
- sentence syntax (word order, sentence types, etc.)

# Ibibio & Medefaidrin: Phonology

## Ibibio

- 2 tone register language with terracing
- no voiced fricatives
- very few consonant clusters, the highest being two consonant clusters, usually of the Cr and CG form.
- none word finally

## Medefaidrin

- stress language.  
Adams (1947:26)
- voiced fricatives and affricates: dzjaʃ, gizn, ruzerd, seminant and dzibreant
- consonant clusters:  
Seminant (Holy Spirit)  
atieft, dzibreant,  
edikanapt, Enikrismas,  
ekenskwak, edipikn

# Medfaidrin: Consonant clusters

fenslet	to forgive
cliffin	to know
xpil	to pluck
osprid	quickly
texran	table
dabt	cup

# Medfaidrin: Morphology

- Nouns and verbs:
  - No structural difference
    - unlike Ibibio (nominal prefixes etc.)
  - both may begin with either vowel or consonant segments.

# Medfaidrin: some parts of speech

Nouns:	sakdinet	noun	black person (African)			
	xpradinet	noun	white person (Caucasian)			
	ranked	noun	orange			
	primol	verb	like/love			
Verbs:	binet	verb	touch			
	fenslet	verb	forgive			
gias	pron	us	1 pl, obj	manet	modal	must
ak	pron	it		sai	modal	can
senio	pron	we	1 pl, aub	dge	det/art	the (def)
swis	dem pron	this		osprid	adv	quickly
				aban	adj	afar
				yanod	adj	new
				dio	prep	on
				kin	prep	in
				yudia	prep	over
				dfe	prep	of
				arien	conj	and

# Medfaidrin: Derivational morphology

ponk	ask	pnkixio	question
eis (ses)	is	nues	are (aux)
aima	north	sema	south
piupaya	east	piuzed	west
antonim	ground	intonim	floor
asped	right	sesped	left
mefunsy	good	meyafungood	morning
	morning	sy	(response)
baisy	spoon	kubaisy	ladle
emisor	mortar	emsiy	pestle
piupaya	east	piuzed	west

# Medfaidrin: Nominal compounds

<b>Modifier</b>	<b>Head</b>	<b>Compound</b>	<b>English translation</b>
sak	dinet	sakdinet	black person (African)
xpra	dinet	xpradinet	white person (Caucasian)

# Medfaidrin: Morphology

Medfidrin marks noun plurals by s/z suffixation such as the following:

drin	drins	word(s)
dyup	dyups	thing(s)
anigrein	anigreins	friend(s)

# Medefaidrin: Orthography

- Sound letter relations
- It is difficult to relate the Medefaidrin sounds to the letters in the orthographic text. However, we shall attempt to do this in a simple way. The orthography is different from the sound system of the language. For instance,
- Orthographic **pg** sequence corresponds to [f]
- **eis** corresponds to [ses]

# Medfaidrin: Sentence structure

Word order

unmarked SVO

Parts of speech

nouns, verbs, prepositions, pronouns, conjunctions

Examples from a short moral story:

atiu	veid	sueny	ranked
I	have	many	orange(s)

atiu	xtran	zu	dopitel	maghrn
I	walk	to	school	everyday

# Medfaidrin: Sentence structure

feas	giad	binet	dge	efuel
let	us	touch	the	egg

sebrifais	fensel	mium		
please	forgive	them		

7	kwid	liu	primol	ak
?	do	you	love	it

nipgiin	xpil	dge	ranked	
do not	pluck	the	orange	

# Media layout features

- Letter follows European structure & layout conventions
- Numbered paragraphs
- Left-right writing system
- Words separated by space
- English-type punctuation

# Initial results

# Initial results: revealed but influenced

- Generic characterisation:
  - a language explicitly created for a special purpose
  - thus a language with essentially one register
  - ‘taught and learned, not acquired’
  - one of many ‘divinely revealed’ languages
  - script one of many in West Africa
- Specific characterisation:
  - not
    - a calculus for mathematical, logical purposes
    - for inclusive communication (Esperanto)
    - ‘speaking in tongues’ (glossolalia)
  - exclusive, ‘revealed’, ‘secret’, religious ‘spirit’ language

# Initial results: revealed but influenced

- English influence:
  - phonology:
    - clusters
  - orthography:
    - some individual characters resemble roman characters
    - punctuation, left-right orthography
  - prosody:
    - stress (though apparently yielding to Ibibio)
  - morphology:
    - -ing Aspect
    - -s/-z Plural
- Layouting conventions

# Initial results: revealed but influenced

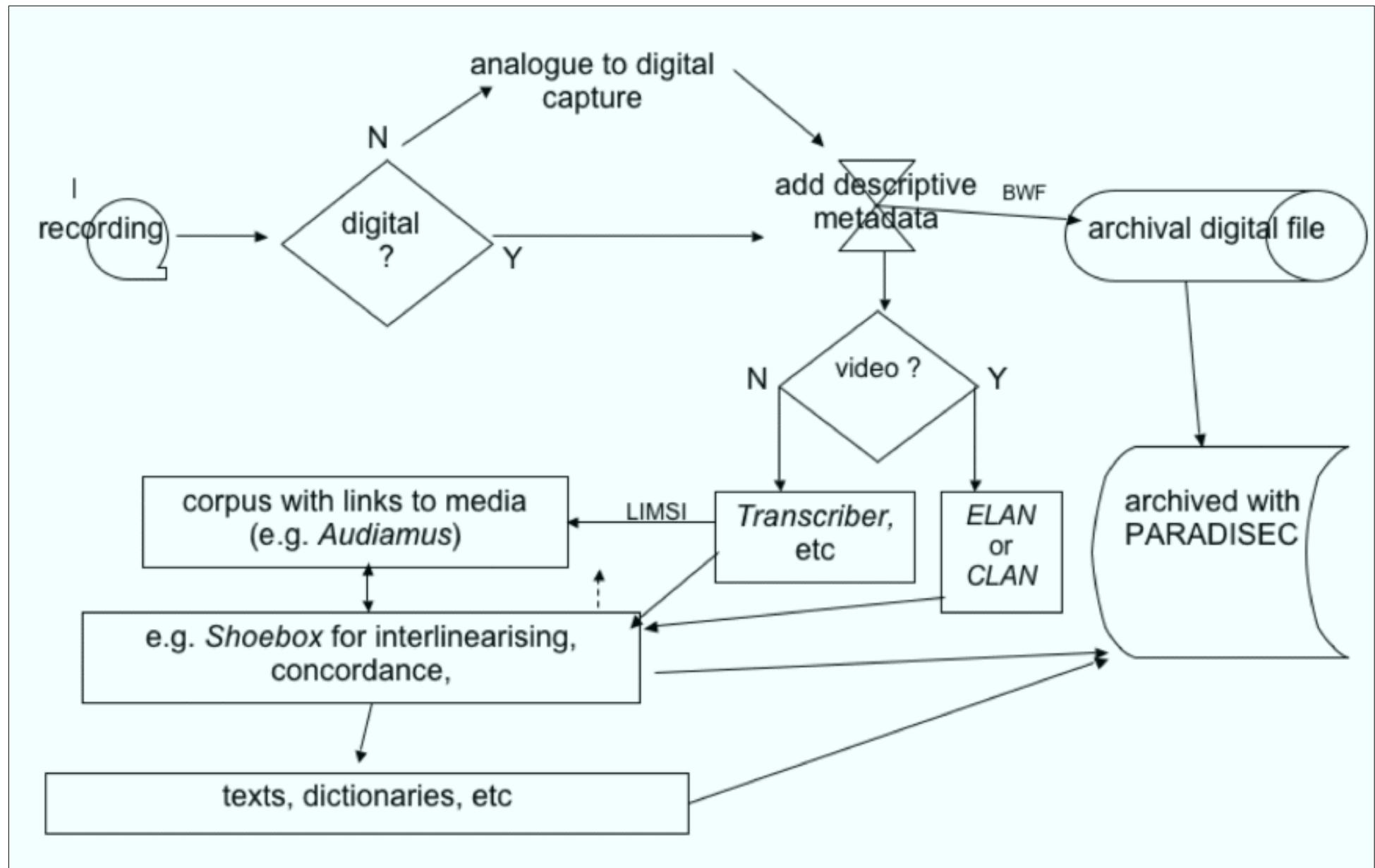
- Ibibio influence:
  - adjective postposition
  - numeral system
    - simplified from Ibibio (bases 5, 10 and 20)
    - only base 20
  - Increasing influence of Ibibio after 70 years?

# Initial results: revealed but influenced

- Speculation on genesis ...
  - imitation of missionary
    - preaching style
    - writing conventions
  - ‘secret’ re-invented layers
    - orthography
    - vocabulary
  - founding factors:
    - charismatic founder
    - influence of missionary language English
    - influence of native language Ibibio
  - a special case of language + culture contact
    - language contact inspires language birth

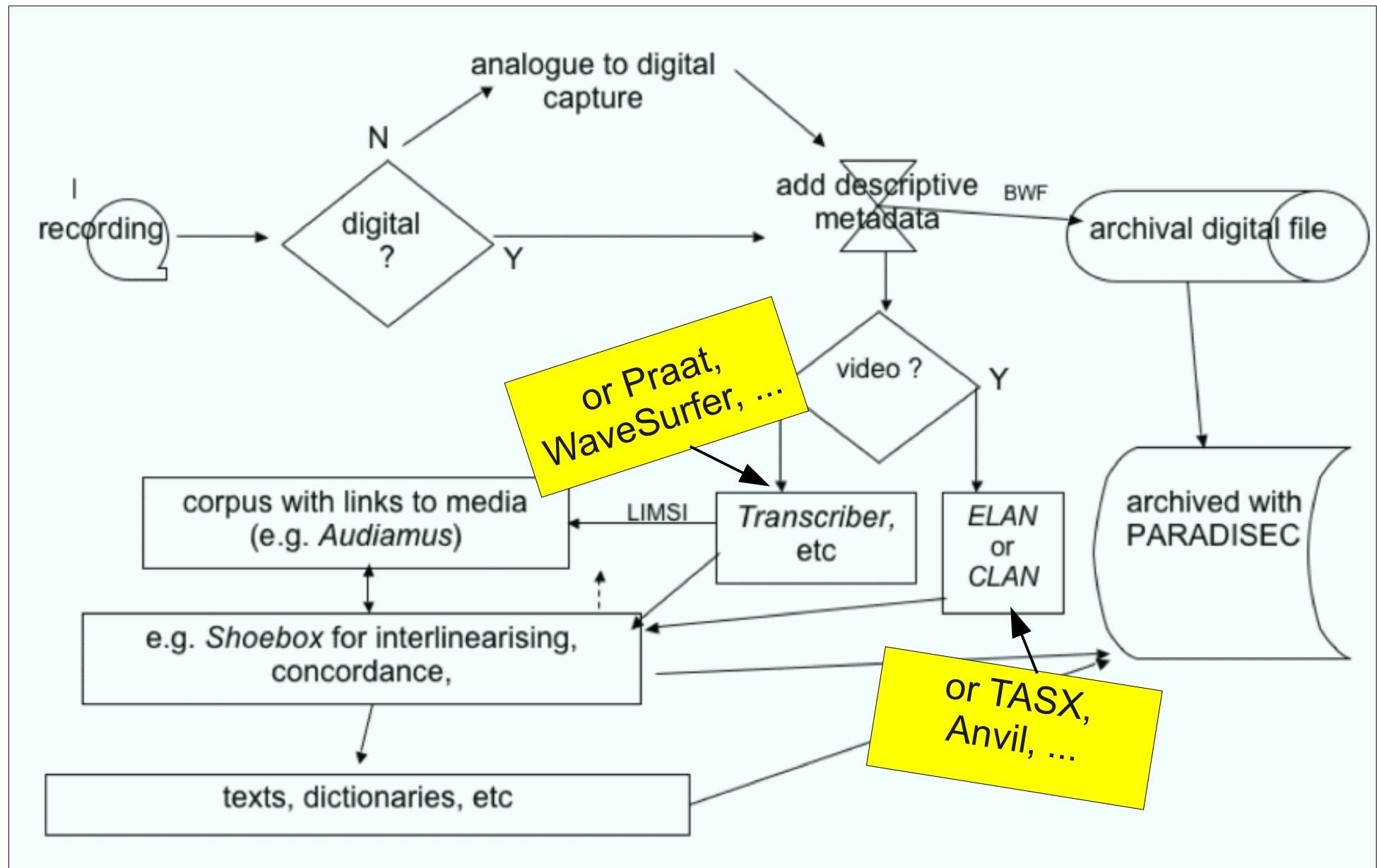
# Documentation

# Thieberger-Nash resource creation model



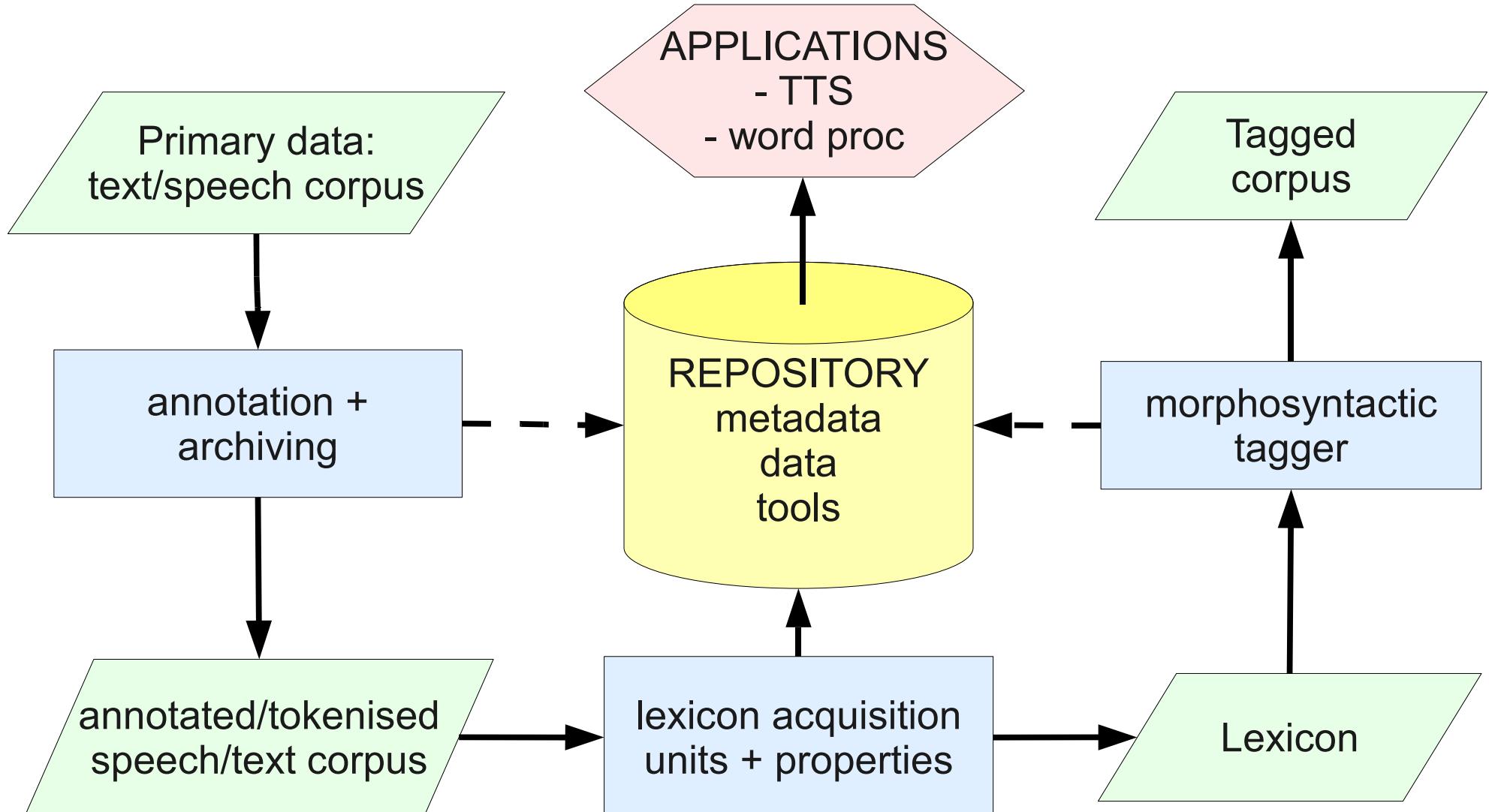
Nick Thieberger, David Nash (Australia)

# Thieberger-Nash resource creation model



Nick Thieberger, David Nash (Australia)

# BLARK based resource creation model



# Quality criteria

- Criteria for local language resources, tools and systems - CESAF:
  - Comprehensive (with respect to application domain)
  - Effective (in terms of human and computing resources)
  - State-of-the-art (intellectually, not necessarily the latest internet-dependent software and hardware)
  - Affordable (older computing facilities)
  - Fair (does software localisation benefit producer, community, both?)
- Specifications:
  - Basic LAnguage Resource Kit (Elsnet: Krauwer)

# Initial results: dictionary database

ஆ	Pron	Atiu	Ami	I	Atiu sai vus ak	I can do it
ଡ୍ସାର୍ଜିପ	Verb	Nimazid	Wed	Write	Nimazid cc colia zu xium	Write a letter to him
ଶାସ୍ତ୍ର	Noun	Colia	Leta	Letter	Hmbien dge colia	Where is the letter?
ବୁଦ୍ଧି	Conj.	Capium	Nyun	And	Lauz capium trek	Come and eat
ଫୋଟ	Verb	Trek	Dia	Eat	Kwid liu trek liuzio ekyu	Did you eat your food?
ପାଇଁ	Noun	Dukuma	Ikpon; mkpon	Cocoyam	Dukuma eis colen fra mea	Cocoyam is good for me
ମୁସ୍କୁ	Noun	Abinzy	Bia	Yam	Ruzaid abinzy fra mea	Sell yam for me
ଖାନ୍ଦା	Noun	Fosra	Garri	Garri	Nipgin trek fosra etuals	Do not eat garri always
ଲୁଣ୍ଠାବ୍ରା	Noun	Yisru	Usun	Foo foo	Nipgin trek yisru axol	Do not eat foofoo alone

In preparation: DATR lexicon (integrated inheritance lexicon & grammar)

# Initial results: ‘talking dictionary’

S/N o	Script	Translit.	POS	IBIBIO	ENGLISH	Sound
1	Ⓐ	Atiu	Pron.	Ami	I	
2	Ⓓⓐⓐⓐ	Nimazid	Verb	Wed	Write	
3	Ⓛⓐⓐ	Colia	Noun	Leta	Letter	
4	Ⓛⓐⓑⓐ	Capium	Conj.	Nyun	And	
5	Ⓣⓐⓐ	Trek	Verb	Dia	Eat	
6	Ⓟⓐⓐⓐ	Dukuma	Noun	Ikpon; mkpon	Cocoyam	
7	Ⓜⓐⓐⓐ	Abinzy	Noun	Bia	Yam	
8	Ⓕⓐⓐⓐ	Fosra	Noun	Garri	Garri	

# Prospects

## Ongoing work:

- Text:
  - Graphotactic analysis
  - Further linguistic analysis
- Speech:
  - transcription, annotation
  - speech corpus analysis
  - microvoice synthesis
  - Speech-specific analysis:
    - Phonology and phonetics
    - Grammar, disfluencies
- Computational lexicography:
  - talking dictionary

# Working bibliography (1)

- Abasiattai, Monday B. 1989. The Oberi Okaime Christian Mission: Towards a History of an Ibibio Independent Church in Africa: *Journal of the International African Institute*, Vol. 59, No. 4 (1989), pp. 496-516
- Abasiattai, M. B. 2008. The Ibibio Oberi Okaime: The tenth wonder of the world. A lecture presented at the 1st Faculty of Arts Distinguished Lecture Series, February 2008 at the Onyema Ugochukwu Hall, University of Uyo, Uyo, Nigeria.
- Adams, R. F. G. 1947. Oberi Okaimε: A New African Language and Script. Africa: *Journal of the International African Institute*, Vol. 17, No. 1, (Jan., 1947), pp. 24-34. Edinburgh University Press.
- Cooper, Robert L. (1991). Dreams of scripts: Writing systems as gifts of God. In: Cooper, Robert L. & Bernard Spolsky, eds. *The Influence of Language on Culture and Thought. Essays in Honor of Joshua A. Fishman's Sixty-Fifth Birthday*. Berlin: Mouton de Gruyter.
- Dalby, David. 1967. A survey of the indigenous scripts of Liberia and Sierra Leone: Vai, Mende, Kpelle, and Bassa. *African Language Studies* 8:1-51.
- Dalby, David. 1968. The indigenous scripts of West Africa and Surinam: their inspiration and design. *African Language Studies* 9:156-197.
- Dalby, David. 1969. Further indigenous scripts of West Africa: Manding, Wolof, and Fula alphabets and Yoruba holy-writing. *African Language Studies* 10:161-191.

# Working bibliography (2)

- Essien, O. E. (nd) Religion, politics and language: a case study of Oberi Okime. (abstract).
- Hau, Kathleen, 1961. Oberi Okaime script, texts and counting systems in Bulletin de l'Institut Francais d'Afrique Noire. SÈrie B, Sciences humaines. 23 (1-2), janvier-avril 1961, pages 291-308. Dakar. (1953?)
- Hofmeyr, Isabel 2006. Myths in Heaven: dreams, texts and conspicuous circulation (miraculous literacy in African Christianity in Current Writing: Texts and Reception in Southern Africa.
- Ibrahim, Jibrin 1991. Religion and Political Turbulence in Nigeria in The Journal of Modern African Studies 29/1, pp 115-136.
- Pratten, David. 2007. Mystics and missionaries: Narratives of the spirit movement in Eastern Nigeria. Social Anthropology/Anthropologie Sociale (2007) 15, 1 47–70.
- Turner, Harold W. 1975. African Independent Churches and Education in The Journal of Modern African Studies 13/2, pp 295-308.
- Udofia, Akpan Akpan (ca. 1953) Dictionary, transcriptions and translations of texts. In: Hau, Kathleen 1953. Oberi Okaime Script, Texts and Counting System. Material relating to the Oberi Okaime language of southeastern Nigeria.