

A sketch of Nobiin tone

Front cover: *Map of the Nubia region today. Nobiin is spoken North of Aswan, at Wadi Halfa, etc. (see §1.1).*

Created by Mark Dingemanse, based on various maps of Egypt and Sudan.

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1. Introduction

1. Geography and demography

Nobiin is a Nubian language spoken along the banks of the Nile River in southern Egypt and northern Sudan by approximately 495 000 people¹. It is classified as Nilo-Saharan > Eastern Sudanic > Nubian > Northern Nubian. Many Nobiin speaking Nubians were forced to relocate in 1963-1964 due to the construction of the Aswan High Dam at Aswan, Egypt, to make room for Lake Nasser. Nowadays, Nobiin speakers live in the following areas: (1) near Kom Ombo, Egypt, about 40 km north of Aswan, where new housing was provided by the Egyptian government for approximately 50,000 Nubians; (2) in New Halfa in the Kassala state of Sudan; (3) in the Northern state of Sudan, northwards from Burgeg to the Egyptian border at Wadi Halfa. Additionally, many Nubians have moved to large cities like Cairo and Khartoum.

Nobiin has been called Mahas, Mahas-Fiadidja, and Fiadicca in the past. Mahas and Fiadidja are geographical terms corresponding to alleged dialectal variants of Nobiin; Werner contends, based on Bell (1974) that in fact there is no evidence for the distinctness of the two (cf W:18–24)².

Nobiin, or any other Nubian language, should not be confused with the Arabic-based creole *Ki-Nubi* spoken in Uganda and Kenya by the descendants of Sudanese soldiers. The name Kinubi derives from a misuse of the term 'Nubi'; in fact, the soldiers were from the south of Sudan and spoke Mamvu and Bari³.

2. Research into Nobiin

Nobiin is one of the very few African languages having a written history that can be followed over the course of more than a millenium. The Old Nubian language, preserved in a sizable collection of mainly early Christian manuscripts and documented in detail by Gerald M. Browne⁴ (1944-2004), is considered ancestral to Nobiin.

Synchronic research on the Nile Nubian languages started in the second half of the nineteenth century. Several well-known Africanists have occupied themselves with Nubian, most notably Lepsius (1880), Reinisch (1879), and Meinhof (1918); other early Nubian scholars include Almkvist and Schäfer. More recently treatments have been published by Bell (1973) and Werner (1987). Important comparative work on the Nubian languages has been carried out by Thelwall and in the nineties by Bechhaus-Gerst.

On Werner's Grammatik des Nobiin

The principal source of data for the present paper is Roland Werner's 1987 *Grammatik des Nobiin*. This grammar of Nobiin is based on data collected in the course of the eighties, double-checked by his one informant, Mohammad Suleimaan Melik from Daal, Sukkood.

One of the best things about *Grammatik des Nobiin* is the sheer wealth of data and Werner's plainness about his elicitation and transcription methods. The book contains two lengthy text sources (a Nobiin reading book and a collection of Nobiin proverbs) with sentence-by-sentence translations into German. Werner repeatedly assures that all tonal data has been checked and double-checked by his informant (cf. W:4, 338). Other things that deserve mentioning are Werner's extensive account of earlier research into Nobiin, the helpful excursions to Old Nubian, and the fairly comprehensive glossary at the end of the book.

¹ SIL International/Ethnologue: Languages of the World, 15th Edition

² Citations in this format refer to Werner (1987)

³ Cf. Owens (1991)

⁴ Most relevant for the present sketch is his *Old Nubian Grammar* (2002).

The emphasis of Werner’s account is on phonology, morphology, and tonology (cf. 1987:4). This is particularly clear in his approach to examples and example sentences: examples are rarely given in their context and Werner never provides glosses for his (numerous) sample sentences. Where possible, I have tried to cite examples in their context by drawing them from the texts; and I have glossed the example sentences for ease of reference.

3. Brief phonology and morphology

This section presents a very brief outline of Nobiin phonology and morphology to provide context to the discussion of the tonal system of Nobiin in the rest of the paper. Nobiin has a five vowel system with contrastive length (see table).

A phonemic consonant inventory following Werner’s orthography is given below. Where symbols appear in pairs, the one to the right represents a voiced consonant. The IPA transcription is given for symbols which do not represent their IPA equivalents.

i	u	ii	uu
e	o	ee	oo
a		aa	

	bilabial	labiodental	alveolar	palatal	velar	glottal
plosive	p, b		t, d		k, g	
fricative		f		sh [ç]		h
affricate				c [cç], j [jɟ]		
nasal	m		n	ny [ɲ]	ng [ŋ]	
liquid			l/r			
approximant	w			y [j]		

The phoneme [p] has a somewhat marginal status as it only occurs as a result of certain morphophonological processes. Werner notes that /b/ seems to be in contrast with /f/. The alveolar liquids [l] and [r] are in free variation as in many African languages.

Consonant length is distinctive: *dáwwí* ‘path’ vs. *dáwí* ‘kitchen’. However, Werner notes that gemination is easily lost in many cases (e.g. he often attested the Arabic loan *dùkkáán* ‘shop’ as *dùkáán*).

Nobiin has open and closed syllables: *ág* ‘mouth’, *één* ‘woman’, *gíí* ‘uncle’, *kám* ‘camel’, *díís* ‘blood’. Every syllable bears a tone. Long consonants are only found in intervocalic position, whereas long vowels can occur in initial, medial and final position. There seems to be a weak relationship between consonant and vowel length not discussed by Werner, exemplified as follows:

1	dàrril	‘climb (on):1SG.PRES’	féyyir	‘grow:1SG.PRES’
	dààril	‘be present:1SG.PRES’	fééyir	‘lose (a battle):1SG.PRES’
	*dàril, *dààrril		*féyir, *fééyyir	

4. Terminology and notational conventions

Tone is marked by use of [´] (accent aigu) for High, [`] (accent grave) for Low, and [^] for Falling tone. High and Low will be sometimes abbreviated to H and L, and Falling to HL. When writing out tonal patterns in full, H and L tones are separated by a period [.], whereas HL signifies a falling tone. Thus the tonal pattern of the nonsense word *àbadà* is written L.H.L whereas that of *àbà* is written L.HL.

Unless otherwise noted, this paper sticks to the orthography used in Werner (1987). Thus, long consonants and long vowels are rendered *cc* or *vv* respectively — [èd:i] ‘hand’ is written *èddi* and

[fũ:dè:n] ‘dung-beetle’ is rendered *fũ̀dédé*. All symbols represent their IPA equivalents except for /sh/, /c/, /j/, /y/, /ny/, and /ng/, whose IPA equivalents are listed in the phoneme inventory above.

A notable difference between the notation used by Werner and the notation used here occurs in the tone marking of long vowels. Werner marks tone only the first symbol of a long vowel (e.g. ‘gũnyĩr’, *to look*). To the eye of a linguist used to underspecified notational systems, this may look like a H.M.L pattern at first sight (even when on second thought Nobiin has no Mid tone). To avoid this unclarity, tone will be marked in full here – thus, *gṹnyĩr* (H.L).

Abbreviations used in glosses and examples

]i	end of intonational phrase or ‘utterance final position’
1	first person
2	second person
3	third person
CONN	connexive
DEM1	demonstrative pronoun 1 (nearby, ‘this’)
OB	object marker
IMPF	imperfect
IMPT	imperative
PL	plural
POSS	possessive pronoun
PRES	present
Q	question marker
SG	singular

2. Tone system

1. Surface tones

On the surface, Nobiin has two level tones, High and Low, and one contour tone, Falling (HL)⁵. Consequently, Werner mentions that there are three tonemes: 'Es finden sich also drei Toneme: H, T, und F.' (1987:65).

2 a	árré	settlement	H
b	nùùr	shadow	L
c	àcîr	bite	L.HL

2. Phonemic tones

Nobiin has two underlying tones, H and L. The falling contour tone occurs only in well-defined contexts (most often in pre-pausal position), and can be analysed as arising from a High and a Low tone together. There is thus no need to posit an underlying contour tone.

A lot of verbs end in a contour tone according to Werner's transcription. However, this is due to the occurrence of a boundary tone in the elicitation mode used by Werner (see §3.2 and §4.4). Werner's citation form for verbs is first person singular, present tense⁶, resulting in all verbs being recorded in utterance final position. In 3a-c below, the difference is illustrated. Contrary to Werner, I always cite verbs in the form of bare verbal bases, unless otherwise noted.

- 3 a kúnìr
'have', citation form (1SG.PRES)
- b ày ùr wèèkà kúnìr
I head one:OB have:1SG.PRES
I have a head
- c ày ùr wèèkà kúnírèè?
I head one:DO have:1SG.PRES-Q:1SG
Do I have a head?

Tone bearing unit

Judging from examples like 4a,b below, the tone bearing unit in Nobiin is the mora. The examples illustrate the occurrence of the boundary tone (analysed in more detail in §4.4). The Low boundary tone, when docking on a short final vowel, replaces its High tone entirely. Now if the *syllable* were the tone bearing unit, we would expect the second example to become *kàdiis* (L.L) along the same lines. However, we find a L.HL pattern, as shown in 4b This is best explained by analysing the long vowel as consisting of two morae and by subsequently assuming that the mora is the tone bearing unit.

- 4 a ámán 'water' ámán]_l
b kàdíis 'cat' kàdíis]_l

⁵ Some tonal minimal pairs can be found in chapter 4.

⁶ "1. sgl. Präs. Akt.", W:65. Incidentally, Werner is quite aware of the prepausal tone showing up on verb in his main elicitation mode, cf. W:69.

3. Stress, accent and the history of tone in Nobiin

For a long time, the Nile Nubian languages were thought to be non-tonal; instead, they were thought to have some kind of stress or accent system. Werner cites the Egyptologist Lepsius, who in 1880 spoke of the *Wohlklang* of the Nubian language, and who related this to the vowel distribution and the balance between long and short consonants⁷. Subsequent synchronic analyses of Nubian languages employed terms like ‘accent’ and ‘stress’ to describe the phenomena; Werner notes that it is sometimes (but by no means always) possible to correlate the High tone to the accent in the analysis of Reinisch (1879). In the early twentieth century, several authors perceived tone as a relevant autosegmental phenomenon in Nubian languages, sometimes using ‘tone’ and ‘accent’ as synonyms. Werner summarizes that Nubian scholars in the early twentieth century (1) had no clear idea of tone, and yet (2) were conscious of the fact that there were tonal phenomena in Nubian languages, and that they (3) considered Nobiin and Kenzi-Dongolawi were similar in this respect.

Carl Meinhof, well aware of tone in the ‘Sudansprachen’ at the time he conducted research on the Nile Nubian languages, reported that only remnants of a tone system could be found in the Nubian languages. He based this conclusion not only on his own data, but also on the observation that Old Nubian had been written without tonal marking: ‘Dafür, dass die musikalische Töne eine erhebliche Rolle nicht spielen können, spricht auch der Umstand, dass sie in der Übersetzung der Evangelien (...) nicht berücksichtigt sind, und dass die Texte trotzdem ohne Schwierigkeit von den Nubiern verstanden werden. Das wäre in einer echten Tonsprache, z.B. im Ewe, einfach unmöglich.’⁸

Based on accounts like Meinhof’s, but also Almkvist and Reinisch, Nobiin was considered a toneless language for the first half of the twentieth century. In 1933 for example, Westermann and Ward wrote in their *Practical Phonetics* that ‘Swahili and Nuba are good examples of languages which were probably once tone languages and which are said to have lost their tones’⁹.

The statements of *de facto* authorities like Meinhof, Westermann, and Ward heavily affected the next three decades of linguistic theorizing about suprasegmental phenomena in the Nubian languages. As late as 1968, Herman Bell was the first scholar to develop an account of tone in Nobiin. Although his analysis was still hampered by the occasional confusion of accent and tone, he is credited by Werner as being the first to recognize that Nobiin is a genuine tonal language has two tonemes, and the first to lay down some elementary tonal rules.

Nowadays, Old Nubian is seen as a tonal language just like its descendant Nobiin. Browne (2002:23) writes that the Nobiin minimal pairs *in* ‘your’ (sg.) vs. *in* ‘this’ and *úr* ‘your’ (pl.) vs. *úr* ‘head’ appear in Old Nubian as *en* and *our* respectively. Obviously, the Nubians had a way to distinguish these forms even though they were written the same, leading him to conclude that ‘[Old Nubian] probably followed the tone system observable in modern Nobiin’.

Finally, with regard to stress in Nobiin, Werner (W:77) remarks that he did not perceive any accent phenomena and that he does not see any reason to tie the account of tone to anything of the sort, concluding that “[d]em Ton muss im Nobiin also ein hoher funktionaler Stellenwert zugemessen werden”.

⁷ Failure to recognize tone as such is of course not something to reproach Lepsius with, or any other scholar from that time; only five years earlier, Christaller’s Twi grammar and dictionary had appeared, celebrated as one of the first publications to appreciate *tone* in African linguistics; and it would take several decades from then for tone to be generally accepted.

⁸ Meinhof 1918/19:230, as cited in Werner 1987:55. Note that Ewe is written virtually without tone marking nowadays.

⁹ Westermann & Ward 1933:139

3. Tonal melodies

Underlying tonal patterns of words play an important role in Nobiin tonology. In this chapter, the basic patterns of nouns and verbs will be laid out. Most examples in this chapter are drawn from the Nobiin text *Nòðbíín nóg géryè* included in *Grammatik des Nobiin* (W:274–309) and from Werner’s 1100-item word list (W:338–383).

1. Nouns

Morphology

Nouns in Nobiin are predominantly disyllabic, but monosyllabic and three- or four-syllabic nouns are also found. Many nouns are unstable with regard to vowel length; thus, *bálé* : *báleeé* ‘feast’, *ííg* : *íg* ‘fire’, *shártí* : *sháártí* ‘spear’. In plural formation, the tone of a noun becomes Low and one of four plural markers is suffixed as described in more detail in §5.2. The emphasis in this section will be on singular forms, as this is where the underlying tone patterns are observed most clearly.

Gender is expressed lexically, occasionally by use of a suffix, but more often with a different noun altogether, or, in the case of animals, by use of a separate nominal element *óndí* ‘masculine’ or *kàrréé* ‘feminine’ (5a-c)

5 a	íd	‘man’	ìdéeén	‘woman’
b	tòòd	‘boy’	búú	‘girl’
c	kàjkàrréé	‘she-ass’	kàjnóndí	‘donkey’

The pair *male slave/female slave* forms an interesting exception, showing gender marking through different endings of the lexeme.

6	òsshí	pl. òsshìì	‘slave (m)’
	òsshá/òssháá	pl. òsshààríí	‘slave (f)’

Werner notes that this is the only example of the sort. The Old Nubian equivalent is *oshonaeigou* ‘slaves’; the plural suffix *-gou* used here has a modern equivalent in the *-gúú* plural suffix.

Tonal patterns

There are four tonal patterns found on nouns: L, H, L.H and H.L.

7 a	ür	head	L
	àshì	afterbirth	L
	tìì	cow	L
b	ág	mouth	H
	díís	blood	H
	úkkí	ear	H
c	àgó	mother-in-law	L.H
	kiccád	gazelle	L.H
	ùbúrtí	ashes (sg.)	L.H
	tòrbá	farmer	L.H
	tìitóód	calf	L.H
d	áádèm	man	H.L > Arabic

According to Werner, the H.L pattern is quite rare; his only example (reproduced above) is the Arabic loan *áádèm* ‘man’. The H and L patterns are only found on monosyllabic and disyllabic nouns in Werner’s examples (W:78); i.e., all longer words are L.H.

In many derivational processes, nouns lose their distinctive tone in favor of a Low tone, while the derivational suffix brings its own tone. Similarly, in noun-noun compounds, the first noun becomes Low while the second noun keeps its own tone pattern. See section 5.2 for examples and discussion.

2. Verbs

Morphology

Verbal morphology in Nobiin is subject to numerous morphophonological processes, including syllable contraction, vowel elision, and assimilation of all sorts and directions. A distinction needs to be made between the verbal base and the morphemes that follow. The majority of verbal bases in Nobiin end in a consonant (e.g. *nèèr-* 'sleep', *kàb-* 'eat', *tíg-* 'follow', *fīyyí-* 'lie'); notable exceptions are *júú-* 'go' and *níí-* 'drink'. Verbal bases are mono- or disyllabic. The verbal base carries one of three or four (see below) tonal patterns. Only rarely do verbal bases occur without appended morphemes. One such case is sentence 8a below, where the verb *júú-* 'go' is found in a serial verb-like construction together with the verb *jáán-* 'buy'. As this example shows, the main verb carries person, number, tense, and aspect¹⁰ information, whereas 'go' occurs as a bare verbal base. Example 8b provides a simple sentence.

- 8 a *árij wèèkà fà júú jáánir* ^(W:302)
 meat one:DO FUT go buy:1SG.PRES
I'm going to buy a piece of meat.
- b *ày féjirkà sállir* ^(W:286)
 I morning.prayer pray:1SG.PRES
I pray the morning prayer

Tonal patterns

While Werner's analysis in most places is thorough and well thought-out, his account of tonology in the verbal system is considerably muddled by the fact that he does not take the boundary tone into consideration. In this section, I will try to show that the analysis of Nobiin tonology gains in clearness and depth if we fully separate the effect of the boundary tone from the underlying tonal pattern of the verb itself.

According to Werner, three basic tonal patterns can be distinguished on verbs. Werner's examples representing the three tonal patterns of verbs (W:141) are reproduced below.

9	Type 1	Low - Low	<i>nèèr</i> 'sleep'
	Type 2	High - Low	<i>jáánir</i> 'sell'
	Type 3	Low - High	<i>fīyyir</i> 'lie' ¹¹

As mentioned before, Werner has recorded all verbs in utterance final position, causing the boundary tone to occur. It is clear that this potentially obscures any verbal tonal pattern ending in Low tone. In particular, given the occurrence of a boundary tone, it is not clear from this data why Type 2 would be High-Low and not, say, just High.

¹⁰ What is glossed as PRES here ('present') is according to Werner not just a 'present tense' but also in aspectual opposition to what he calls 'preterite' (roughly equivalent to the *imperfective/perfective* distinction).

¹¹ In his initial set of examples, Werner uses the verb *tīgil* 'sit' to illustrate type 3, only to mention later that "Typ 3.2 repräsentiert die den erweiterten Formen zugrundeliegende Form nicht das dem Verb spezifische Tonmuster (...). Eine Erklärung für dieses Phänomen ist wohl, dass hier eine Silbenkontraktion stattgefunden hat, bei der der Hochton der zweiten Silbe den Tiefton der ersten Silbe verdrängt und vollkommen ersetzt hat."

In short, Werner uses a clear exception as example here. To avoid muddling the issue too much, I have instead selected an uncontroversial Type 3 verb from Werner's own list (W:144).

Passing this issue over in silence, Werner proposes that the tonal pattern in many cases is spread out over verbal base and ending as a whole (W:144, cf. W:63). While this is an important observation, and certainly true in some contexts (see §5.2 on Templates), it does not help to conclusively establish the tonal pattern of Type 2 verbs.

A reanalysis

As a matter of fact, I think there are several reasons to call Werner's analysis into doubt at this point. Even though the alleged High-Low pattern seems to go a long way, partly due to the boundary tone, here and there examples keep popping up that are difficult to account for in Werner's analysis. Based on a reanalysis of Werner's data, I will show first of all that the majority of Werner's Type 2 verbs in fact would be better analyzed as underlyingly High. Consider the following paradigms.

10 a	nèèr! ^(W:220) sleep:2SG.IMPT <i>Sleep!</i>	ày nèèrèè I sleep:1SG.PRES-Q1SG <i>Do I sleep?</i>	nèèrìr (Type 1)
b	tóòg! ^(W:246) hit:2SG.IMPT <i>Hit!</i>	ày tóògrèè I hit:1SG.PRES-Q1SG <i>Do I hit?</i>	tóògìr (Type 2)

The set of examples above compares a Type 1 and a Type 2 verb in a final context (the imperative) and in a non-final context (question formation). In his discussion of this particular question formation strategy¹², Werner lists the first person singular suffix as *-rèè*. Indeed, from example 9a it is clear that the question marker has to be *-rèè* with a H.L pattern; for there can be no other source for the high tone in *ày nèèrèè*. Now with a Type 2 verb being High-Low, one would expect a form like **ày tóògrèè*, preserving both the H.L pattern of the verb and the H.L pattern of the question marker. This form is ungrammatical, however. Where did the Low tone go?

Werner seeks to resolve this issue by simply stipulating that the verbal base in this case becomes High. This is an unsatisfying explanation at best, given the general persistency of the underlying tonal patterns in other parts of the verbal paradigm. Ascribing the alleged disappearance of the Low tone to regressive assimilation seems another possibility at first sight, but this is effectively ruled out by example 10a (for real examples of regressive tonal assimilation, see §5.1). Yet another possibility seems to lie in Werner's earlier statement that the tonal pattern is spread out over verbal base and ending as a whole; again, this solution is rendered unattractive if we contrast 10b with 10a, from which it is obvious that *-rèè* in fact has brought its own tone.

The solution seems to lie in abandoning the unwarranted assumption that the verb has a Low tone at all. If we analyze this verb as simply High, the problem dissolves; the low tone found in the various forms is simply the boundary tone and we do not need to worry about the alleged disappearance of the Low tone of the verb in some contexts. Additionally, several related phenomena are explained instead of being exceptional. One of them¹³ is the serial verb-like construction below, showing the Type 2 verb *júú-* 'go' in non-final position.

¹² *Frageform II* in Werner's terminology (W:155-156, §6.2.5.2).

¹³ To be sure, there are also a few cases which don't fit my reanalysis so well; in some parts of the verbal paradigm, tonal behaviour seems sometimes simply unpredictable. I will not be able to get into this deeply here, although the subject matter definitely merits a comprehensive treatment.

- 11 a íd dirbáttá júú gójónáà? ^(W:305)
 man hen go slaughter:3SG.IMPF-Q3SG
Did the man go and slaughter the hen?
- b árij wèèkà fà júú jáánir ^(W:302)
 meat one:DO FUT go buy:1SG.PRES
I'm going to buy a piece of meat.

As I take it, the fact that *júú* has no Low tone in this context constitutes independent evidence for my proposal that Werner's Type 2 be analyzed as underlyingly High. Thus, the system comes to look like this:

12	Type 1	nèèr-	'sleep'	L	nèèrèè	sleep:1sg.pres-Q:1sg
	Type 2	jáán-	'sell'	H	jáánnéè ¹⁴	sell:1SG.PRES-Q:1SG
	Type 3	fiyyí-	'lie'	L.H	fiyyírèè	lie:1SG.PRES-Q:1SG

In fact, there might be evidence for a Type 4, constituting the *real* High-Low pattern. In Werner's list of Type 2 verb paradigms there is a verb *fááyì-* 'kill' which Werner describes as remarkable (W:145). In this verb, a Low tone shows up in unexpected contexts. It seems that the tonal behaviour of this verb would be just what we expect from a verb with an underlying High-Low pattern.

??	Type 4	fááyì-	'kill'	H.L	fááyèèrèè	kill:1SG.PRES-Q:1SG
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It should be noted however that this seems to be a rather isolated example; hence the question marks before 'Type 4'. In addition, the paradigm of this verb (W:254–255) is in some places fairly similar to that of the 'normal' Type 2 verbs (which is of course the reason that Werner has grouped it with those). One could venture the hypothesis that this fourth type (H-L) would have been difficult to distinguish from Type 2 (H) in a lot of contexts *precisely* because of the occurrence of the boundary tone; and, even more tentatively, that this might have caused a merger of the two types. More investigation is needed, however, to determine whether there are grounds at all to assume the existence of Type 4.

¹⁴ The first consonant of question marker *-rèè* assimilates to the final nasal of the verbal base, yielding *-néè*.

4. Function of tone

1. Functional load

In Nobiin, tone is used to mark lexical contrasts, but also figures heavily in derivational morphology as will be seen in detail in chapter 5 on tonal rules. Tone therefore has a heavy functional load in Nobiin, mainly in lexicon and morphology. In addition, the boundary tone described below is a manifestation of tone at the level of the intonational phrase. This chapter will serve to highlight some of the typical uses of tone.

2. Minimal pairs

13 a	árré	settlement	H
	àrréé	waterfall	L.H
b	dúkkí	bag	H
	dùkkí	little hill	L.H
c	núúr	light (> Arabic)	H
	nùür	shadow	L
d	één	woman	H
	èèn	mother	L
e	jóór-	collapse	H.L
	jòòr-	make an oath	L
f	jókkí-	thirst (v)	H.L
	jòkkí-	chew (v)	L.HL
g	ín	2SG.POSS (your)	H
	ìn	DEM1 (this)	L

The latter pair merits an example in context. It contrasts the possessive pronoun *ín* 'your' with the demonstrative pronoun *ìn* (this). In many cases, these pronouns can simply be distinguished by the fact that demonstrative pronouns always precede the noun they refer to, while possessive pronouns follow it. However, both can be used independently (cf. W:119,121). When used independently in object position, they take the object marker *-ga*, yielding *íngá* and *ìngà*, respectively (*-ga* can be said to assume the tone of the preceding lexeme¹⁵).

- 14 a Kamal íngá kàbì
Kamal 2SG.POSS:OB eat:3SG.PRES
Kamal eats that-of-you, 'yours'
- b Kamal ìngà kàbì
Kamal DEM1:OB eat:3SG.PRES
Kamal eats this

3. Derivational processes

Tone plays an important role in several derivational processes. The most common situation involves the loss of the original tone pattern of the derivational base and the subsequent assignment of Low tone, along with the affixation of a morpheme or word bringing its own tonal pattern. This process might be analysed as involving the application of a certain tonal template. A typical example

¹⁵ Matters are a little more complex than this example suggests; in his discussion of the object marker (W:98-99), Werner cites several examples that contradict each other, making it difficult to reach a satisfying conclusion about the tonal behaviour of *-ga*.

involving compounding is given below; the reader is referred to chapter 5 on tone rules for a more detailed treatment of *plural formation*, *nominal compounding*, and *nominal derivation*.

15 kàdíís ‘cat’ + mórrí ‘wild’ kàdiìs-mórrí ‘wild cat’

Werner discusses some examples of structures apparently produced by derivational processes that no longer seem to be productive. Some of those that are interesting from the point of view of tonology are reproduced below.

16 a kèffá (kèffaàncii) arm (pl)
 kèffí (kèffiñcii) box on the ear (pl) (German *Ohrfeige*)
 b kittáán fabric, textile (>Arabic)
 kittí garment
 c één woman
 èèn mother

4. Boundary tone

In Nobiin, every utterance ends in a low tone. This is one of the clearest signs of what might be analyzed as the occurrence of a *boundary tone*, realized as a low tone on the last syllable of any prepausal word (Werner describes the occurrence of this tone in terms of *Pausa* and *Non-Pausa*). Examples 17a,b below show how the surface tone of the High tone verb *ókké-* ‘cook’ depends on the position of the verb. In 17a, the verb is not final (because the question marker *-náà* is appended) and thus it is realized as High. In 17b, the verb is in utterance final position, resulting in a low tone on the last tone bearing unit¹⁶. The imperative forms of the High tone verbs *éd-* and *jáán-* in 18a,b provide another example of the occurrence of the boundary tone. Example 19a shows the High tone noun *kàdíís* ‘cat’ in isolation causing the boundary tone to appear, while 19b shows that the word has a final H when not in final position.

17 a íttírkà ókkéénáà? ^(W:278)
 vegetables:DO cook:3SG.PRES-Q:3SG
 Does she cook the vegetables?
 b èyyò íttírkà ókkè
 yes vegetables:DO cook:3SG.PRES
 Yes, she cooks the vegetables.
 18 a éd- → êd! ‘take!’
 b jáán- → jáàn! ‘sell/buy!’
 19 a kàdíís ‘cat’
 b kàmáál kàdíís wèèkà kúni ^(W:279)
 Kamal cat one:OB have:3SG.PRES
 Kamal has a cat.

Aside from utterance final position, there are a few other contexts where the boundary tone manifests itself.

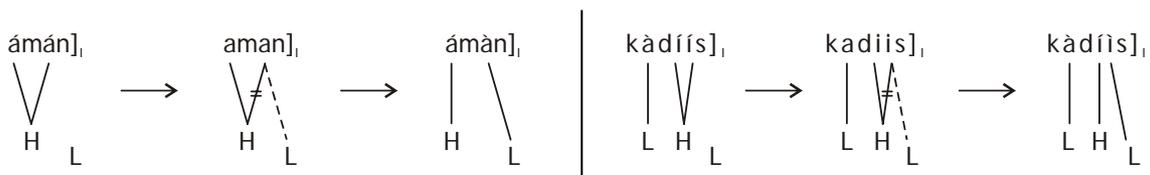
¹⁶ Changes in vowel length and quality are due to a contraction of the verb ending and the 3SG.PRES affix *-i*.

- 20 a fágónnà, máshá jùgrà ^(W:75)
 summer-in]_i sun be.hot:3sg
In the summer, the sun is hot
- b shítéélà, hààjá mállé órkírà ^(W:75)
 winter-in]_i thing all be.cold:3sg
In the winter, everything is cold

According to Werner, there is a short pause after the adverbial phrases in examples 20a,b, accompanied with the docking of a boundary tone on the postposition (underlined).¹⁷ Normally, the postposition *-lá* 'in, on, at' has a High tone and induces regressive tonal assimilation, as will be seen in chapter 5 below¹⁸.

Underlyingly, the boundary tone might be analysed as a tone located at the right edge of an intonational phrase (IP). Examples 4a,b from chapter 2 are repeated below as 21a,b, followed by an autosegmental representation of the docking of the boundary tone. The boundary tone is rendered a little lower than the lexical tones to illustrate the fact that it originates on another level of the prosodic hierarchy.

- 21 a ámán 'water' ámán]_i
 b kàdíís 'cat' kàdíís]_i



¹⁷ Werner specifically notes: 'Hier wird nach der adverbialen Bestimmung innegehalten, so als stünde ein Doppelpunkt da.'

¹⁸ The words *fágóón* 'summer' and *shítéél* 'winter' both have a final H tone. I have not been able to find a context suitable to determine whether the regressive assimilation induced by *-lá* still takes place if the boundary tone has docked onto it. I suspect it does.

5. Tone rules

1. Regressive assimilation

Regressive tonal assimilation is a fairly regular phenomenon in Nobiin. The locative postposition *-lá* induces regressive tonal assimilation, causing the syllable which precedes it to become H, as example 22 illustrates. The connexive *-goon* displays the same behaviour (23). Similarly, the passive verbal extension *-dákki* causes the preceding tone on the verb to become H if it isn't already (24).

- 22 mìn ámán túúl áányi? ^(W:299) > *tùù* 'belly' + *lá* 'in' → *túúlá/túúl* 'in the belly'
 what water belly:in live:PRES.Q1:2/3SG
What lives in the water?
- 23 ànúúkóón (W:72) > *ànùù* + *-góón*
 grandfather:my:CONN
 'And my grandfather'
- 24 a döllídákkis ^(W:172) > *dòlli-* + *-dákki*
 love.PASS.1SG:IMPF
I have been loved.
- b kábdákkìr ^(W:172) > *kàb-* + *-dákki*
 eat.PASS.1SG:PRES
I am eaten.

2. Templates

Tone plays an important role in the derivational morphology of Nobiin. Several related processes, probably best analysed as the application of a certain template (Werner uses the term '*Tonmuster*'), are illustrated below. Templates could be analysed as a L.H pattern imposed upon the whole word. This is what Werner does – hence his earlier remark that tonal patterns in some cases spread over base and ending as a whole. Alternatively, they can be analysed as the deletion of the distinctive tone pattern of the derivational base in favor of a (default) L tone, in conjunction with the preservation of the H tone of the appended suffix. It should be noted that Werner's analysis was partly based on verbal paradigms that, in my opinion, rather show the interference of the boundary tone. Neither of the two analyses seems to offer a clear advantage over the other, although the latter one in invoking a default L tone is more sympathetic to a theory which allows for underspecification of tones.

Plural formation

In plural formation, the tone of a noun becomes Low and one of four plural markers is suffixed (W:80). Two of these are Low in tone, while the other two have a High tone.

- 25 a -ìì L féntí → fèntìì 'dates'
 b -ncìì L àrréé → àrrèèncìì 'falls'
 c -ríí H áádèm → ààdèmríí 'men, people'
 d -gúú H kúrsí → kùrsìgúú 'chairs'

In most cases it is not predictable which suffix a noun will take¹⁹. Furthermore, many nouns can take different suffixes, e.g. *ág* 'mouth' → *àgìì/àgríí*. Some regularities can be observed however. In

¹⁹ Werner (W:81) mentions that Zyhlarz (1928) proposed to link *-ríí* to animate and *-niì* to inanimate nouns, but he is quick to point out that this proposal didn't even hold for Zyhlarz's own data, nor for Old Nubian or for Werner's Nobiin data.

particular, nouns that have final *-éé* usually take Plural b (*-nci*), whereas disyllabic Low-High nouns typically take Plural a (*-i*).

Compounding

In nominal compounds, something similar to plural formation happens: the first noun loses its tonal pattern in favor of a Low tone, while the second noun keeps its own tonal pattern.

26	kàdíís ‘cat’ + mórrí ‘wild’	kàdiis-mórrí ‘wild cat’
	iskiríí ‘guest’ + nóóg ‘house’	iskiriin-nóóg ‘guest room’
	tògój ‘sling’ + kid ‘stone’	tògòj-kid ‘sling stone’

Werner notes that many compounds are found in two forms, one more lexicalized than the other. Thus, it is common to find both the coordinated noun phrase *báhàrn àmán* ‘the water of the river’ and the compound noun *bàhàrn-àmán* ‘river-water’.

Nominal derivation

Nobiin has an extensive inventory of all sorts of nominalising suffixes. All answer to the description of the general pattern: a suffix bringing H tone, the rest of the word becoming L.

27 a	-ííd	bànnýíd ‘speech’	> bannyí- ‘speak’
		jùúwííd ‘(the) going’	> júú- ‘go’
		kàbííd ‘eating, meal’	> kàb- ‘eat’
b	-áttí	tànnýáttí ‘(much-)go-er’	> tánnýí- ‘go’
		bààngáttí ‘bleater’	> bààngí- ‘bleat’ ²⁰
c	-ír	kààsír ‘turban’	> káás- ‘wind’
		kòshkír ‘tool’	> kóshkí- ‘make, manufacture’

The derivation of ordinal numbers from cardinal numbers can be seen as a subset of nominal derivation. Example 28a shows a few ordinals. It should be noted that the numeral system of Nobiin (cardinals and ordinals alike) is replaced by the Arabic numerals at a quick rate. Werner notes that his informant was uncertain about counting beyond 30 in Nobiin. The same nominalising suffix can be used to derive nouns from verbs (28b). Werner analyses it as *in+ti*, remarking that *-tí* possibly brings a singulative connotation.

28 a	ùwwíttí ‘second’	> úwwó ‘two’
	tùskíttí ‘third’	> túskó ‘three’
	kòlòdíttí ‘seventh’	> kòlòd ‘seven’
	àròíttí ‘twentieth’	> áróó ‘twenty’
b	èwíttí ‘field work’	> éwé- ‘do field work’
	fàyíttí ‘writing’	> fááy- ‘write’

²⁰ I am not sure of the form of this verbal base; Werner lists the 1SG.PRES form as *bààngír*, a type 3 verb.

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