

**GRAMMATICAL CONTACT IN THE SAHARA:
Arabic, Berber, and Songhay in Tabelbala and Siwa**

A dissertation submitted to the School of Oriental and African Studies, University of
London, in partial fulfillment of the requirements for the degree of Doctor of
Philosophy

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August 2010**

Declaration for PhD thesis

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Abstract

This thesis examines the effects of contact on the grammars of the languages of two oases in the Sahara, Siwa and Tabelbala. As relatively small centres of agriculture and long-distance trade, isolated for nearly a millennium from their nearest relatives and from any other sedentary groups by vast spans of desert mainly inhabited by sparse populations of nomads speaking a different language but sharing the same religion, and now integrated into an Arabic-speaking state, these share similar linguistic ecologies in many respects, and can be regarded as among the most extreme representatives of a language contact situation ongoing for centuries across the oases of the northern Sahara. No comprehensive study of the grammatical effects of contact in such a situation exists.

This work identifies and argues for contact effects across a wide range of core morphology and syntax, using these both to shed new light on regional history and to test claims about the limits on, and expected outcomes of, contact. While reaffirming the ubiquity of pattern copying, the results encourage an expanded understanding of the role of material borrowing in grammatical contact, showing that the borrowing of functional morphemes and of paradigmatic sets of words or phrases containing them can lead to grammatical change. More generally, it confirms the uniformitarian principle that diachronic change arises through the long-term application of processes observable in synchronic language contact situations. The similarity of the sociolinguistic situations provides a close approximation to a natural controlled experiment, allowing us to pinpoint cases where differences in the original structure of the recipient language appear to have influenced its receptivity to external influence in those aspects of structure.

CONTENTS	4
Figures	10
Tables	11
Acknowledgements	13
Key to abbreviations	14
1 Introduction	15
1.1 Siwi	16
1.1.1 Location and origins	17
1.1.2 Contact with Arabic	19
1.1.3 Current sociolinguistic attitudes	21
1.1.4 Sources	22
1.1.5 Phonology	23
1.2 Kwarandzyey	23
1.2.1 Location and origins	23
1.2.2 Contact with Berber and Arabic	25
1.2.3 Current sociolinguistic attitudes	30
1.2.4 Sources	31
1.2.5 Phonology	32
1.3 Mechanisms of morphosyntactic influence	33
1.3.1 Direct	33
1.3.2 Indirect	36
2 NP features: person, gender, number, definiteness	40
2.1 Person	40
2.1.1 Siwi personal pronouns	41
2.1.2 Kwarandzyey personal pronouns	48
2.2 Gender	60
2.2.1 Background	60
2.2.2 Siwi	61
2.2.3 Kwarandzyey	67
2.3 Number	72
2.3.1 Siwi	74
2.3.1.1 Semantics	74
2.3.1.2 Morphology	77
2.3.2 Kwarandzyey	91
2.3.2.1 Semantics	92
2.3.2.2 Head-internal plural morphology	95
2.3.2.2.1 Berber-style plurals	95
2.3.2.2.1.1 In <i>(ts)i-....aCən</i>	97
2.3.2.2.1.2 In <i>(ts)i-....<u>...-ən</i>	102
2.3.2.2.1.3 In <i>(ts)i-....-Can[ən]</i>	104
2.3.2.2.1.4 In <i>(ts)i-....-wan[ən] / (ts)i-....-yan[ən]</i>	108
2.3.2.2.1.5 In <i>(t)i-...-ən</i> alone	110
2.3.2.2.1.6 Irregular cases	110
2.3.2.2.2 Arabic plurals	111
2.3.2.2.3 Borrowed nouns with no lexical plurals	112
2.3.2.3 Inherited <i>-yu</i> and its distribution	112
2.4 Definiteness	116
2.4.1 Siwi	116

2.4.1.1	Reflexes of the Arabic article	117
2.4.1.2	Siwi definiteness marking	118
2.4.2	Kwarandzyey	121
2.4.2.1	Reflexes of the Arabic article	121
2.4.2.2	Kwarandzyey definiteness marking	122
2.5	Case marking	124
2.6	Conclusions	127
3	Adjectives	129
3.1	Background	131
3.1.1	Arabic	131
3.1.2	Berber	134
3.1.3	Songhay	137
3.2	Comparatives	138
3.2.1	Arabic	138
3.2.2	Berber	140
3.2.3	Songhay	143
3.3	Deadjectival abstract nouns	144
3.4	Siwi	145
3.4.1	Agreement morphology	147
3.4.2	Aspectual morphology	150
3.4.3	Attribution	151
3.4.4	Predication	154
3.4.5	Comparison	157
3.4.6	Deadjectival nouns	161
3.5	Kwarandzyey	162
3.5.1	Form of Arabic borrowings	164
3.5.1.1	Verbal	164
3.5.1.2	Nominal	168
3.5.1.3	Adjectival	170
3.5.2	Attribution	172
3.5.3	Predication	173
3.5.4	Comparison	176
3.5.5	Deadjectival nouns	177
3.6	Conclusions	178
4	Numerals and other quantifiers	180
4.1	Siwi	181
4.1.1	Numeral forms	181
4.1.1.1	Integers	181
4.1.1.2	Fractions	184
4.1.1.3	Interrogative	185
4.1.1.4	Cryptic numerals	186
4.1.1.5	Measures	186
4.1.1.5.1	Duals	186
4.1.1.5.2	Measures that behave like Arabic normal count nouns	186
4.1.1.5.3	Measures that behave like Arabic special count nouns	191
4.1.1.6	Absolute time specification	192
4.1.1.7	Non-numerical quantifiers	192
4.1.1.7.1	Fuzzy amount quantifiers	193

4.1.1.7.2	Universal quantifiers	196
4.1.1.7.3	Existential quantifiers	199
4.1.2	Nominal morphology: mass vs. count nouns	200
4.1.2.1	Count nouns formed by the feminine	201
4.1.2.2	Count noun – generic mass noun syncretism	203
4.1.2.3	Suppletive count forms	203
4.1.3	Syntax	204
4.1.3.1	Quantifying count nouns	204
4.1.3.2	Quantifying mass nouns	210
4.2	Kwarandzyey	210
4.2.1	Forms	210
4.2.1.1	Cryptic numerals	212
4.2.1.2	Fractions	215
4.2.1.3	Interrogative	215
4.2.1.4	Measure words	215
4.2.1.4.1	Measures behaving like Arabic normal count nouns	215
4.2.1.4.2	Measures behaving like Arabic special count nouns	218
4.2.1.5	Absolute time specification	219
4.2.1.6	Currency	220
4.2.1.7	Non-numerical quantifiers	221
4.2.1.7.1	Fuzzy amount quantifiers	221
4.2.1.7.2	Universal quantifiers	224
4.2.1.7.2.1	Universal quantifier compounds	228
4.2.1.7.3	Existential quantifiers	229
4.2.2	The mass-count distinction	232
4.2.3	Syntax	233
4.2.3.1	Quantifying count nouns	233
4.2.3.1.1	Integers	233
4.2.3.1.1.1	Syntax of numbers across Songhay	239
4.3.3.1.1.2	Analysis	248
4.3.3.1.2	Fractions	248
4.3.3.2	Quantifying mass nouns	248
4.3.4	Distributive use	249
4.3.5	Predicative use	250
4.4	Conclusion	251
	5 Demonstratives and relative clauses	253
5.1	Introduction	253
5.2	Siwi	255
5.2.1	Categories and forms	255
5.2.1.1	Origins	256
5.2.1.1.1	Distances and anaphoric forms	257
5.2.1.1.2	Addressee agreement	258
5.2.2	Adnominal demonstrative syntax	261
5.2.2	Syntax of relative clauses	267
5.3	Kwarandzyey	274
5.3.1	Categories and forms	275
5.3.1.1	Origins	281
5.3.2	Adnominal demonstrative syntax	286

5.3.3	Relative clause syntax	287
5.4	Conclusions	297
6	Adpositions	299
6.1	Definitions	299
6.2	Background comparison	300
6.3	Predictions	302
6.4	Siwi	306
6.4.1	Siwi adnominal adpositions	307
6.4.2	Siwi locative and dative adpositions	308
6.4.2.1	Simple	308
6.4.2.2	Complex	311
6.4.3	Siwi delimiting adpositions	313
6.4.4	Siwi temporal adpositions	314
6.4.5	Siwi adpositions of manner	316
6.4.6	Siwi prepositions of cause, condition, and purpose	318
6.4.7	Pronominal object suffixes	320
6.5	Kwarandzyey	320
6.5.1	Kwarandzyey primary postpositions	320
6.5.1.1	Kwarandzyey adnominal postpositions	321
6.5.1.2	Kwarandzyey adverbial postpositions	328
6.5.1.3	Acquisition as an explanation	330
6.5.1.4	Motion and postpositions	331
6.5.2	Kwarandzyey secondary postpositions	335
6.5.3	Kwarandzyey prepositions	338
6.5.4	Adverbs of manner	347
6.5.5	Adpositions with heavy complements	347
6.6	Adpositions in long-distance relations	351
6.6.1	Siwi	351
6.6.2	Kwarandzyey	353
6.7	Theta role marking	355
6.8	Conclusions	355
7	Verbs and predication	358
7.1	Causatives and passives	358
7.1.1	Causatives and passives in Siwi	359
7.1.2	Causatives and passives in Kwarandzyey	363
7.2	Directional marking	366
7.2.1	Survivals of directional marking in Siwi	366
7.2.2	Directional marking in Kwarandzyey	367
7.3	Tense, mood and aspect	371
7.3.1	Siwi TAM	373
7.3.1.1	Stem changes	374
7.3.1.1.1	Functions of the Siwi “aorist”	381
7.3.1.1.2	Functions of the Siwi “perfect”	385
7.3.1.1.3	Functions of the Siwi “intensive”	386
7.3.1.2	The imperative in Siwi	387
7.3.1.2	Suffixed <i>-a</i>	389
7.3.2	Kwarandzyey TAM	392
7.3.2.1	Basic positive TAM markers	394

7.3.2.1.1	Perfective	396
7.3.2.1.2	Optative	398
7.3.2.1.3	Imperfective	399
7.3.2.1.4	Subjunctive/irrealis	401
7.3.2.1.5	Divine agency optative	403
7.3.2.1.6	Imperative	404
7.3.2.2	Pre-mood/aspect marker <i>ba</i>	406
7.3.2.2.1	Perfect	407
7.3.2.2.2	Progressive	409
7.3.2.3	Auxiliaries: <i>baɣam</i> , <i>g^wəb</i>	410
7.3.2.3.1	Future/desiderative <i>baɣam</i>	410
7.3.2.3.2	Inceptive <i>g^wəb</i>	412
7.4	Finiteness	414
7.4.1	Non-finite forms in Siwi	415
7.4.2	Non-finite forms in Kwarandzyey	423
7.5	Non-verbal predication	429
7.5.1	Siwi	430
7.5.2	Kwarandzyey	433
7.6	Negation	435
7.6.1	Siwi negation	435
7.6.1.1	Negators	435
7.6.1.2	Syntax	437
7.6.2	Kwarandzyey negation	441
7.7	Order of verb arguments	447
7.7.1	In Siwi	447
7.7.2	In Kwarandzyey	449
7.7	Conclusions	451
	8 Information structure and conjunctions	452
8.1	Interrogation	452
8.1.1	Interrogation in Siwi	454
8.1.2	Interrogation in Kwarandzyey	457
8.2	Focus and focus particles	458
8.2.1	In Siwi	460
8.2.2	In Kwarandzyey	464
8.3	Topic markers	466
8.4	Subordinators	466
8.4.1	Siwi	467
8.4.2	Kwarandzyey	468
8.5	Coordination	468
8.5.1	Siwi conjunctions	468
8.5.2	Kwarandzyey conjunctions	470
8.6	Conclusion	471
	9 Overview	472
9.1	Matter borrowing	472
9.1.1	Morphophonological effects	472
9.1.2	Units borrowed as wholes	473
9.2	Pattern borrowing/change mediated by matter borrowing or semantic calquing	476

9.2.1	Effects of bound morphology	476
9.2.2	Effects of agreement morphology	481
9.2.3	Effects of lexical parametrisation	482
9.2.3.1	Complement position	482
9.2.3.2	Word class	484
9.3	Unmediated syntactic pattern borrowing	484
9.5	Concluding remarks	485
	Appendix 1: Kwarandzyey Swadesh list compared	486
	Appendix 2: Kwarandzyey texts	492
	Sources	501
	References	502

Figures

Figure 1: Towns of eastern Libya and Egypt that are/have been Berber-speaking within the twentieth century	18
Figure 2: Reflexes of * <i>q</i> in Egypt and Libya	20
Figure 3: The oasis of Tabelbala	24
Figure 4: Geographical distribution of Songhay	25
Figure 5: Premodern Trans-Saharan trade routes (Moraes Farias 2001)	28
Figure 6: Languages spoken around Tabelbala today	29
Figure 7: WALS map of Noun-Numeral order (Dryer 2007)	240

Tables

1 Siwi consonants	23
2 Kwarandzyey consonants	33
3 Siwi personal pronouns	41
4 Plural personal pronouns across eastern Berber	45
5 Kwarandzyey personal pronouns	48
6 Kwarandzyey verbs with their forms preceding 3 rd person object pronouns	49
7 Comparative Songhay pronouns	50
8 Agreement and the definiteness cline across Songhay, Arabic, and Berber	57
9 Fruit and tree in Siwi	65
10 Natural gender in Kwarandzyey	67
11 Derivational gender with Berber morphology in Kwarandzyey	69
12 Arabic loans for bipartite objects in Siwi	75
13 Inherited plural types in Siwi, classed in Prasse's system	77
14 Feminine plurals in <i>-iy-</i> in Siwi	81
15 Masculine plurals in <i>-iy-</i> in Siwi	81
16 Ratcliffe's classification of productive Arabic plural types	82
17 Borrowed plural types in Siwi, classed in Ratcliffe's system	82
18 Arabic nouns with Berber plurals in Siwi	89
19 Prasse's classification of Proto-Berber plural types	96
20 Kwarandzyey plural types of Berber origin	97
21 Kwarandzyey plurals in <i>(ts)i-....aCən</i> with original <i>-a-</i>	98
22 Kwarandzyey plurals in <i>(ts)i-....aCən</i> with original <i>-ə-</i>	99
23 Kwarandzyey plurals in <i>(ts)i-....aCən</i> with original <i>-i-</i>	100
24 Kwarandzyey plurals in <i>(ts)i-....aCən</i> with original <i>-u-</i>	101
25 Kwarandzyey plurals in <i>(ts)i-....aCən</i> with unclear original vowel	102
26 Kwarandzyey plurals in <i>(ts)i-....<u>...-ən</i>	102
27 Kwarandzyey plurals in <i>(ts)i-....-Can[ən]</i> for consonant-final nouns	104
28 Kwarandzyey plurals in <i>(ts)i-....-Can[ən]</i> for vowel-final nouns	106
29 Kwarandzyey plurals in <i>(ts)i-....-Can[ən]</i> for <i>*r</i> -final nouns	108
30 Kwarandzyey plurals in <i>(ts)i-....-wan[ən]</i> / <i>(ts)i-....-yan[ən]</i>	109
31 Arabic plurals in Kwarandzyey	111
32 Examples of reflexes of the Arabic definite article in Siwi	117
33 Examples of reflexes of the Arabic definite article before <i>m</i> in Siwi	118
34 Siwi adjectives	146
35 Siwi regular adjectival agreement morphology	147
36 Siwi comparative formation	158
37 Siwi deadjectival noun formation	161
38 Kwarandzyey adjectives borrowed from Arabic inchoatives	165
39 Kwarandzyey ordinals compared to Arabic	168
40 Kwarandzyey nominal adjectives	170
41 Kwarandzyey colours listed in Cancel (1908)	171
42 Kwarandzyey attributive and predicative forms of adjectives	172
43 Siwi inherited numerals compared across Berber	181
44 Siwi numerals compared to Cairene Arabic	182
45 Siwi hand-based cryptic numerals	185
46 Siwi colour-based cryptic numerals	185
47 Siwi measures that behave like Arabic count nouns	188
48 Siwi mass nouns with distinct count singulars and plurals	201
49 Siwi deverbal nouns with distinct count singulars and plurals	202
50 Siwi mass nouns with identical count singulars and distinct count plurals	203
51 Syntax of numerals in Siwi compared with various Berber and Arabic	209
52 Kwarandzyey inherited numerals	210
53 Kwarandzyey borrowed numerals	211
54 Kwarandzyey cryptic numerals	213
55 Kwarandzyey numerals by source and syntax	238
56 Northern Songhay numerals by source and syntax	245

57 Siwi demonstratives	255
58 Siwi demonstratives compared across Berber	257
59 Siwi and El-Fogaha demonstratives compared	265
60 Kwarandzyey demonstratives	276
61 Kwarandzyey demonstrative morphemes with Songhay cognates	282
Myers-Scotton's 4-M Model	304
Siwi primary prepositions defining an area relative to the ground	312
Siwi secondary prepositions defining an area relative to the ground	312
Siwi adjectives defining an area relative to the ground	313
Siwi delimiting adpositions	314
Primary prepositions in Songhay	321
Path encoding in Algerian Arabic	332
Path encoding in Kwarandzyey	332
Secondary postpositions in Songhay defining an area relative to a place	336
Secondary postpositions in Songhay defining an area relative to an expanse	337
Kwarandzyey prepositions	338
Adpositions with heavy complements across Songhay	348
Berber and Arabic adpositions in long-distance relations	351
Songhay, Arabic and Berber adpositions in long-distance relations	353
Siwi verbs with <i>ən-</i>	360
Kwarandzyey causatives and denominal verbs of Arabic origin	365
“Perfect” conjugation of “come” in Siwi	367
“Perfect-aorist” alternations in Berber	375
“Perfect-aorist” alternations in Berber for <i>-u-</i> final stems	377
“Intensive”-forming strategies in Siwi	379
Stem alternations for borrowed verbs in Siwi	381
Positive TAM markers in Kwarandzyey	394
Paradigms with <i>ba</i> in modern Kwarandzyey and Cancel	395
Verbal nouns in Siwi	416
Arabic verbal nouns in Kwarandzyey	426
Historically derivationally related borrowed noun-verb pairs in Kwarandzyey	429
Negation of Kwarandzyey TAM markers	441
Interrogative words in Siwi	453
Interrogative words in Kwarandzyey	455
Kwarandzyey, Tadaksahak, KC, and Zarma 100-word Swadesh list	486

Acknowledgements

I very much thank the people I consulted in Tabelbala and Siwa, on field trips made possible by an AHRC grant. *بارك الله فيكم*! Without you this study would have been impossible. Needless to say, any mistakes found here are my own responsibility. I cannot list all the names of those I am grateful towards, and apologise in advance to those I have omitted; but better to list some than none.

The hospitality I encountered in Tabelbala was astonishing and humbling, going beyond anything I had any right to expect, and I will not forget it. I hope that this work, and others to follow it, will be of some use to Belbalis now and in the future, and encourage readers to go see the place for themselves. I cannot thank enough the sons and grandsons of Hadj Barik Yahiaoui – Hadj Mohamed and his son Younes, Hadj Touhami, Smail, and Madani – for hospitality that went far beyond the call of duty and for patient answering of my questions. For expert knowledge of the language, Hadj Berrouk Yahiaoui and Mohamed Larbi “Labyad” Ayachi were particularly helpful. Among the many others who helped me study the language and offered hospitality, particular mention must be made of Hadj Mekki Yahiaoui and his son Taleb Hamza; Hadj Laid Yahiaoui and his sons, notably Abdelaziz, Hachemi, and Omar; Hadj Miloud Yahiaoui; the brothers Hadj Larbi and Hadj Mekki Yahiaoui; Mekki Yahiaoui and Allal Mamoun; Youcef Yahiaoui; Larbi Yahiaoui; Taleb Abdallah Yahiaoui; Hadj Abdallah Yahiaoui; Mostafa Yahiaoui; Abdallah Yahiaoui; Hadj Yahiaoui; Laid Belabbasi; Abdallah Belabbasi; Mohamed Chari; Hadj Fadlaoui; Hammad Bachir; Bachir Yahiaoui; Haida Mbarek; Hadj Mbarek and Hadj Salem Zekraoui; Hadj Madani Zekraoui; Abdelaziz Zekraoui; Ismail Zekraoui; Boufeldja Belaidi; Boudjemaa Zekraoui; Hadj Mabrouk Elmokhtar and Hadj Kada Belaidi; Hadj Ahmed Hamidi; Mohamed Hamidi; Hadj Ahmed Bou Azza; and the old men who assemble every afternoon at the mosques of Kwara, Yami, and Ifrenyu. I am also very grateful for the hospitality and linguistic advice of many non-Kwarandzyey speakers, notably Taleb Khelifa and Baba Belkacem, as well as the Brahmi family for data on Ait Khebbach Tamazight. I gratefully acknowledge the help of the local government and of the Ministry of Religious Affairs in Bechar, notably Mnouar Bellaadham and Imam Mohamed Abbady. Hassane Kanoun and Abdelouahab Cheklat were very helpful in setting things up, and Yasser Yahiaoui offered me invaluable guidance before I even reached the oasis.

Laid-back, poetry-loving, and remarkably confident about its own identity in the face of outsiders' condescension, Siwa was a pleasure to stay in. The ever-philosophical Sherif Bougdoura deserves first mention here; I wouldn't have learned half the Siwi I did without him. Many others were kind enough to invite me places and help me learn their language, notably Abdessalam and Hadj Othman Bou Assa, Hadj Kakkal and Shaykh Omar Rajhi, Brahim, Sleiman, Zakaria Bakreim, Khaled Msellem, Hammad Salih, Said Kilani, and Abdallah Baghi. Nabil Hirbawi shared with me many a Bedouin poem over many a cup of tea, and Mamdouh and Hamdi Abo Khamira helped me settle into the oasis. I also thank the Egyptian government for permitting my travels. Later, it was a pleasure to dine with the Siwis of Qatar, including Isa Madni, Abdallah Bou Assa, and Fathy Bougdoura, and many others.

The kind help of my supervisors, Peter Austin and Phil Jaggard, has been much appreciated, as has been the feedback of Anthony Grant and Tania Kouteva. I am grateful to Jeffrey Heath, Maarten Kossmann, Regula Christiansen, Carlos Benítez-Torres, Cécile Luxe, Ousseïna Alidou, Otto Jastrow, Christfried Naumann, Adam Benkato, Lakhdar Ghetas, and Abdelhamid Snaoui for showing me unpublished data, and Amar Ait for rare books and references. The companionship of fellow linguists has been invaluable; particular thanks to (in alphabetical order) Aicha Belkadi, Dmitry Bondarev, Wynn Chao, Anja Choon, Eleanor Coghil, Gerardo de Caro, Friederike Lüpke, Stuart McGill, Stanly Oomen, Conor Quinn, Sophie Salfner, Rados Voica. Before SOAS, Dominique Caubet and the Rosetta Project played a significant part in encouraging me to take my interest in linguistics further – thanks to Jim Mason for getting the latter off the ground, and Tim Usher for some stimulating arguments.

Baba, Mama, Raji, Roya: thanks for everything. Thanks also to all my aunts and cousins in Algeria, especially Zoubir.

والحمد والشكر لله

Key to abbreviations and glosses

=	clitic boundary
-	morpheme boundary
.	un-segmented combination
/	or
1	1 st person
2	2 nd person
2:M/F/Pl	Addressee male/female/plural
3	3 rd person
ABS	absolute (nominaliser for adjectives/possessives)
ACC	accusative
ADJ	adjective
ADJ	adjective
ANA	anaphoric
ATTR	attributive
APPROX-LCN	approximate location
away	centrifugal particle
C	combining form
CAUS	causative
COM	comitative
COMP	complementiser
COP	copula
Count	count nominal
CTR	contrastive
DAT	dative/allative
DEF	definite
DEM	demonstrative
DIST	distal
DIV.OPT	divine agency optative
DUAL	dual
Emph	emphatic
EP	epenthetic
EXIST	existential
F	feminine (singular)
FOC	focus
FUT	future
G2	postnominal genitive <i>wani/wini</i>
GEN	genitive
hither	centripetal particle
ID	identificational
IMP	imperative
IMPF	imperfective
INCEPT	inceptive
INDEF	indefinite
INST	instrumental
INT	“intensive” (imperfective)
IRR	irrealis

LINK	linker
lo	presentative particle
LOC	locative
M	masculine (singular)
MASS	mass
MOD	modifier
NEG	negative
NEG	negative
NOM	nominative
Obj	direct object
OPT	optative
P / Pl	plural
PASS	passive
PAST	past
PF	perfect
PROG	progressive
PROX	proximal
PT	preterite / past perfective (“perfect”)
PTC	participle
REDUP	reduplication
REL	relative
RH	rhetorical
S / Sg	singular
STAT	stative
SUGG	suggestative
SUP	superlative
VN	verbal noun

Grammatical Contact in the Sahara

1 Introduction

This thesis examines the effects of contact on the grammars of the languages of two oases in the Sahara, Siwa and Tabelbala. As relatively small centres of agriculture and long-distance trade, isolated for nearly a millennium from their nearest relatives and from any other sedentary groups by vast spans of desert mainly inhabited by sparse populations of nomads speaking a different language but sharing the same religion, and now integrated into an Arabic-speaking state, these share similar linguistic ecologies in many respects, and can be regarded as among the most extreme representatives of a language contact situation ongoing for centuries across the oases of the northern Sahara. No comprehensive study of the grammatical effects of contact in such a situation exists.

Intense language contact poses difficulties for the application of the comparative method worldwide, and all the more so regionally. Heine & Kuteva (2001:144) find that “contact-induced change and the implications it has for language classification in Africa are still largely *terra incognita*”, and, as Campbell & Poser (2008:145) note, “progress in the future will depend on bringing such considerations seriously into the picture”. A key goal of this thesis is to demonstrate the feasibility of distinguishing most contact-induced grammatical change from inheritance in the fairly extreme contact situation found here, and to show that doing so provides us with a better understanding of linguistic history than reconstruction alone could. While reaffirming the ubiquity of pattern copying, the results encourage an expanded understanding of the role of material borrowing in grammatical contact, and confirm the uniformitarian principle that diachronic change arises through the long-term application of processes observable in synchronic language contact situations. Beyond this, the similarity of the sociolinguistic situations provides a close approximation to a natural controlled experiment, testing whether or not differences in the original structure of the recipient language influence its receptivity to external influence in those aspects of structure.

1.1 Siwi

1.1.1 Location and origins

Siwi (*siwi* or *žlan n isiwan*) is a Berber language spoken at the oasis of Siwa in western Egypt (Maṭrūh Province), about 500 km west of the Nile and 250 km south of the Mediterranean coast, by a little less than 15,000 people¹, forming a majority of the oasis' population. The nearest Egyptian oasis, Bahariyya, is some 350 km east of Siwa. Siwi is also spoken at the tiny oasis of Gāra near Siwa, and I was told of a multigenerational Siwi community at nearby Jaghbūb in Libya.

Siwi belongs to the Berber sub-family of Afroasiatic, whose other coordinate branches are Semitic, Egyptian, Chadic, Cushitic, and arguably Omotic. Since Arabic belongs to Semitic, it is related to Siwi at the proto-Afro-Asiatic level, but this relationship is rather more distant than (for example) that of English to Hindi; look-alikes are usually loanwords rather than cognates. Within Berber, Aikhenvald and Militarev (1984; according to Takács 1999:130) classify it as belonging to the Eastern Berber subgroup, along with Awjila, Sokna, Ghadames, and Fezzan (=El-Fogaha). While the borders of Eastern Berber remain uncertain, Siwi's closest relative can confidently be identified as the probably extinct dialects of Sokna and El-Fogaha in central Libya (Blažek 2009; Kossmann 1999). Geographically, the closest Berber variety is spoken at the oasis of Awjila in eastern Libya, but this is less closely related, though it shares a few probably contact-related innovations. Everywhere else in eastern and central Libya, Berber has been extinct for centuries, replaced by Arabic.

1 The Egyptian census of 2006, viewable at http://www.msrinternet.capmas.gov.eg/pls/census/cnsest_a_sex_ama?LANG=1&lname=0&YY=2006&cod=33&gv=, gives a population of 15,886 for Siwa, if we include the small Siwi-speaking town of Gara and exclude the Bedouin Arabic-speaking small villages of Maraḳi and Bahayeldin to the east. A minority of non-Siwi Egyptians is also found in the town, reducing the figure slightly, but no estimate of their population is available.

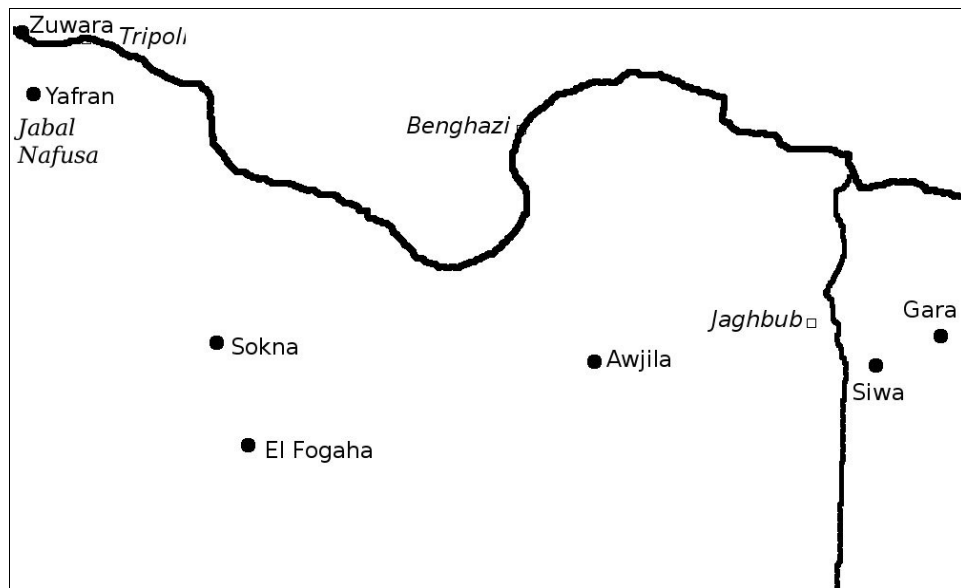


Figure 1: Towns of eastern Libya and Egypt that are/have been Berber-speaking within the twentieth century (indicated by circles)

The presence of Berber in Siwa may predate the Arabic expansion; Fakhry (1973:91) interprets a Coptic chronicle's statement that the Masacaes (thought to be Berber, based on identifying the ethnonym with “Amazigh”) lived “seventeen days' march from Wādī al-Muwayliḥ in a westerly direction” in the year 633 as referring to Siwa. The specific identification may be questioned, but the early presence of Berbers in the Western Desert is confirmed by both classical sources (Mattingly 1983) and early Arabic works (Décobert 1982), and all medieval Arabic geographers' mentions of Siwi ethnic groups, starting in the 12th century, include the Berbers.

However, the fact that Siwi is more closely related to Sokna/El-Fogaha, and even Nafusi, than to nearby Awjila forces us to consider the possibility that a more recent Berber migration from the west replaced the oasis' previous (Berber or non-Berber) language. Bliss (1984:54-5) discusses the possibility that the current Berbers reached the oasis in the medieval period, perhaps even after an earlier Arab migration; this theory would fit the linguistic evidence nicely, although he takes other evidence to militate against it. Suggestive non-linguistic evidence includes the oasis' name – Arab geographers before the 15th century call it “Santariyyah”, and Basset (1890:3) plausibly connects the name Sīwa with that of a Lawāta tribe **سوه** <swh> mentioned by Al-Yaḥqūbi (d. 897/8) as living well to the west in Birnīq (modern Benghazi) and

'Ajdābiyya (Ya'qūbī 1937). The oasis' families are fairly heterogenous, physiognomically and according to their own traditions, but many claim to have come from the west. The Siwan Manuscript, a family record kept since the late nineteenth century, reports that some tribes came from “Jabal Yafrīn”, presumably Yafran in modern-day western Libya, before the 13th century (Fakhry 1973:96); this would fit the linguistic evidence rather well, but could be a post facto story inspired by observation of the similarity between Siwi and Nafusi.

1.1.2 Contact with Arabic

Arab armies conquered Alexandria in 642, and Barqa and Zawīla (eastern Libya) in 643 (Elfasi & Hrbek 1988); the region around Siwa would henceforth be ruled by Arabic speakers. It took longer for Arabic to become the dominant language of the area, but, following extensive immigration and conversion, by the 10th century Arabic had replaced Coptic as the primary language of lower Egypt (Mikhail 2004:978). In eastern Libya, the Bedouin Banū Sulaym, from whom most of the region's current tribes claim descent, entered en masse around 1050, and other Arab tribes had already preceded them to at least the urban centres (Johnson 1973:chap. VI). The difference between sedentary lower Egyptian dialects and Bedouin dialects remains strongly marked to this day, with Bedouin ones displaying the shift $q > g$ and retaining archaic features such as feminine plural agreement. Siwi includes loans from both, but substantially more from non-Bedouin varieties.

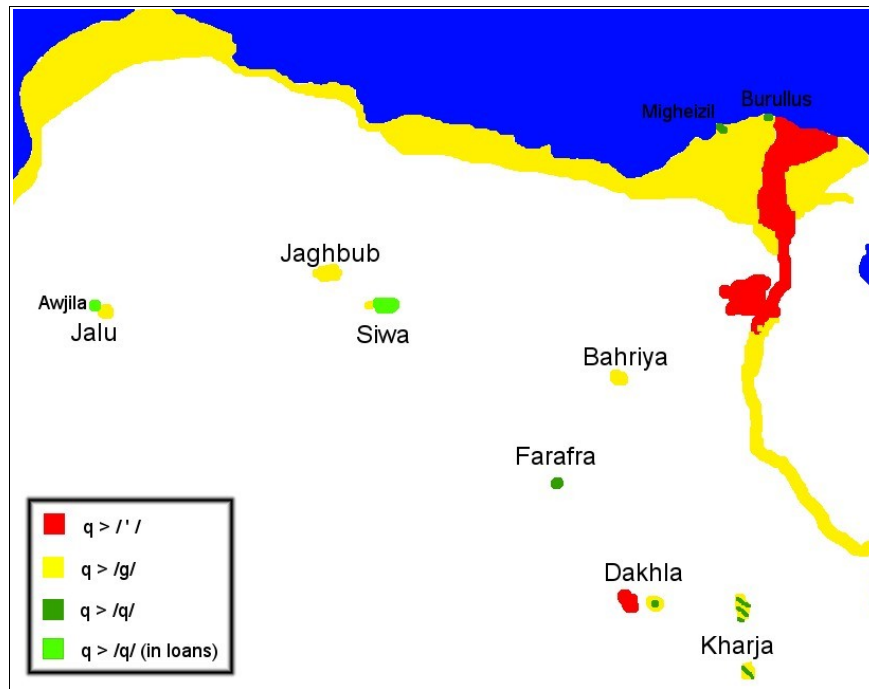


Figure 2: Reflexes of *q in Egypt and Libya

By the 12th century, Arab settlement extended to Siwa itself. Whereas in the 11th century Al-Bakrī (1913:14) says of Siwa *وأهلها بربر لا عرب فيهم* - “its inhabitants are Berbers, with no Arab among them”, a century later Al-Idrīsī (1970:1984.119) says *وبها منبر وقوم من البربر وأخلاق من العرب المحتضرة* “in it is a minbar, and people from the Berbers and various settled Arabs.” This evidence for a significant Arab community inhabiting the oasis at this early date is of particular importance in interpreting the linguistic data; an analysis of loanwords suggests that much of the Arabic influence on the language derives neither from modern Cairene Arabic nor from the Bedouin Arabic spoken around Siwa, but from some earlier stratum with similarities to the dialects of the Egyptian oases (Souag 2009). For example, *q* is preserved in Siwi as in some of the oases, but becomes *'* (?) in the lower Nile Valley and *g* in Bedouin varieties (see map, based on Behnstedt & Woidich (1985), Pereira (2005), Paradisi (1960), and author's fieldnotes.)

This Arab community is not mentioned in the fifteenth century work of al-Maqrīzī (2002:238), where the Siwi language is mentioned for the first time: *لغتهم تُعرف* *بالسيوية* *تقرب إلى لغة زناتة* “their language is known as Siwi, and is close to the

language of [the major Berber tribe] Zanātah". Nor does it appear in later descriptions, although some Siwi tribes claim Arab descent. The oasis currently includes the small Bedouin Arabic-speaking settlements of Maraḳī, but these were settled by the Bedouins only in the early 20th century (Bliss 1984:57).

Siwa was brought under Egyptian rule by Muhammad Ali in 1820 (Fakhry 1973:96). In the same century, the influence of the Sanūsi and Madani Sufi orders became significant. A government school (using Arabic, of course) was built in 1928 (Fakhry 1973:119), and television was introduced in the 1980s; both are now key parts of every young Siwi's life. Siwi landowners began recruiting labourers from upper Egypt in the 1960s, as many young Siwis, then as now, preferred to work on the oil fields in Libya (Fakhry 1973:37); since the 1980s, the expansion of the tourist industry in Siwa has attracted many Arabic speakers from all over Egypt, and selling land to wealthy non-Siwis is a major business. Work-related emigration at present takes many Siwi young men to Alexandria or Libya, and sometimes further afield, including a few dozen in Qatar; while they typically return to the oasis after making enough money to get married, these trips naturally increase their exposure to Arabic.

This modern period has created conditions that appear unusually favourable to the Arabisation of the language – but, while it has undoubtedly influenced the vocabulary, and may have caused some calques, its effects should not be exaggerated. Materials from the 1820s show borrowed functional items already in use where a study of modern Siwi would lead us to expect them; and of the 1496 items on Laoust's (1931) wordlist, 835 (56%) were listed as of Arabic origin (Anthony Grant, pc.) The twentieth century was not the first period of intense Arabic-Siwi contact.

1.1.3 Current sociolinguistic attitudes

At present, Siwi is the in-group language of the oasis; it is the native language of all ethnic Siwis who have grown up in Siwa, and is spoken routinely in front of Arabs. The Bedouin Arabs of Maraḳī sometimes learn to speak it; other Arabs, whether resident or otherwise, almost never do. Nearly all Siwis speak Arabic as a second language from

an early age; their dialect typically tends to be closer to Bedouin Arabic, although better-educated Siwis lean more towards Cairene Arabic. Some ambitious Siwis expressed negative attitudes towards the language, saying that if the kids spoke Arabic it would be better for their educational and political prospects, but I did not encounter any instance of this being put into practice.

Siwa remains largely endogamous, with some social disapproval of marrying outside the community indicated by my consultants and confirmed by Malim (2001). However, with massively increased contact with the outside world through immigration and tourism, temptations to marry out are becoming greater. Although this endogamy appears restrictive to an increasing minority of the Siwis themselves, it is a significant force protecting the language; given the relative prestige of the two languages, children of mixed marriages are more likely than not to end up Arabic-dominant, like the few I met.

1.1.4 Sources

Although no comprehensive reference grammar or dictionary exists, Siwi has received far more attention than other eastern Berber languages, and sources span two centuries. The key sources for Siwi are the grammar and dictionary of Laoust (1931) and the grammar of Vycichl (2005); the latter's bibliography covers wordlists and secondary sources up to 1988. Leguil (1986a; 1986b) is an important contribution to the study of aspect and information structure in Siwi. I will not repeat Vycichl's full list here, but confine myself to adding a couple of works that have appeared since: Šāliḥ (2000), a booklet in Arabic with wordlists and some information on Siwi grammar; Louali and Philippson (2004; 2005), a preliminary investigation of stress in Siwi; Christfried Naumann's forthcoming PhD thesis "An Acoustically-based Phonology and Morphophonology of Siwi (Berber)". Among older sources, particularly interesting are the wordlists of Hornemann (1802), Caillaud (1826), and Minutoli (1827); a useful synthesis of early materials is Basset (1890). Walker (1921) has some interesting lexical data, but should not be examined without a prior knowledge of Siwi. My data here, unless otherwise stated, is based on two months' fieldwork in Siwa plus a number

of sessions with Siwis by phone or in Qatar. It includes 692 A6 pages of written fieldnotes across 3 notebooks, referenced as Nxpy, and about 5 hours of transcribed recordings, referenced by dates followed by file numbers in the format YYYY-MM-DD/nnn. All recordings transcribed were recorded by me, except for three recorded by Muhammad u Madi: *The Story of Two Boys / Tanf^wast n sənn ikūbb^wan* and *The Ogress / Tamza*, recorded 2002-03-18 from Belqasem Ahmad (2002a; 2002b), and *The Story of the Prince's Sword*, recorded from Anwar Ali Ghanem (Ghanem 2002).

1.1.5 Phonology

The Siwi vowel system is *a i u e o* plus a lax *ə*, contrastive in some positions, but usually behaving like an epenthetic vowel. *e* often derives from *a+i* in morphologically complex words, and such an analysis might be extended to all positions. I transcribe a second lax vowel *ɨ* ([ʊ]) for convenience, while recognising that it is an allophone of *ə* next to rounded labials/velars. A few Arabic loans have short *ǎ* in positions where its length cannot be accounted for by Siwi phonology. The consonant system is as follows (elements in brackets are well-attested, but only as alternative pronunciations of Arabic words):

Table 1.

b b ^w	t ṭ d ḍ	č j/ž	k k ^w g g ^w	q q ^w		(')
m m ^w	n					
f f ^w	s ṣ z ẓ (θ)	š		x x ^w γ γ ^w	ħ ʕ	h
w	l ḷ	y				
	r ṛ					

See also Naumann (forthcoming). Stress is not lexically contrastive but is grammatically contrastive for nominals (see Chapter 2), and is marked with an acute accent (´).

1.2 Kwarandzyey

1.2.1 Location and origins

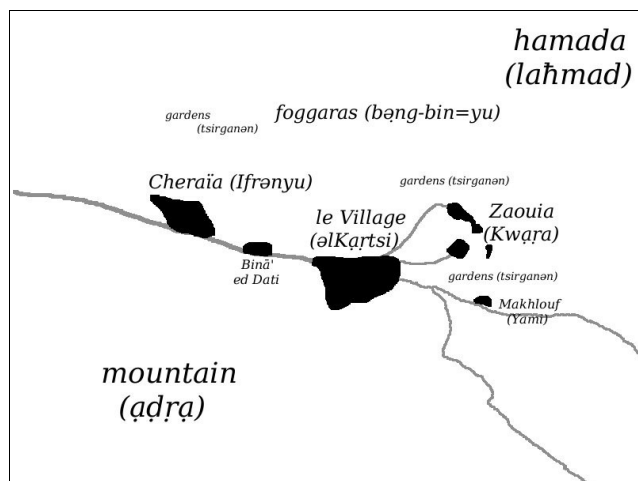
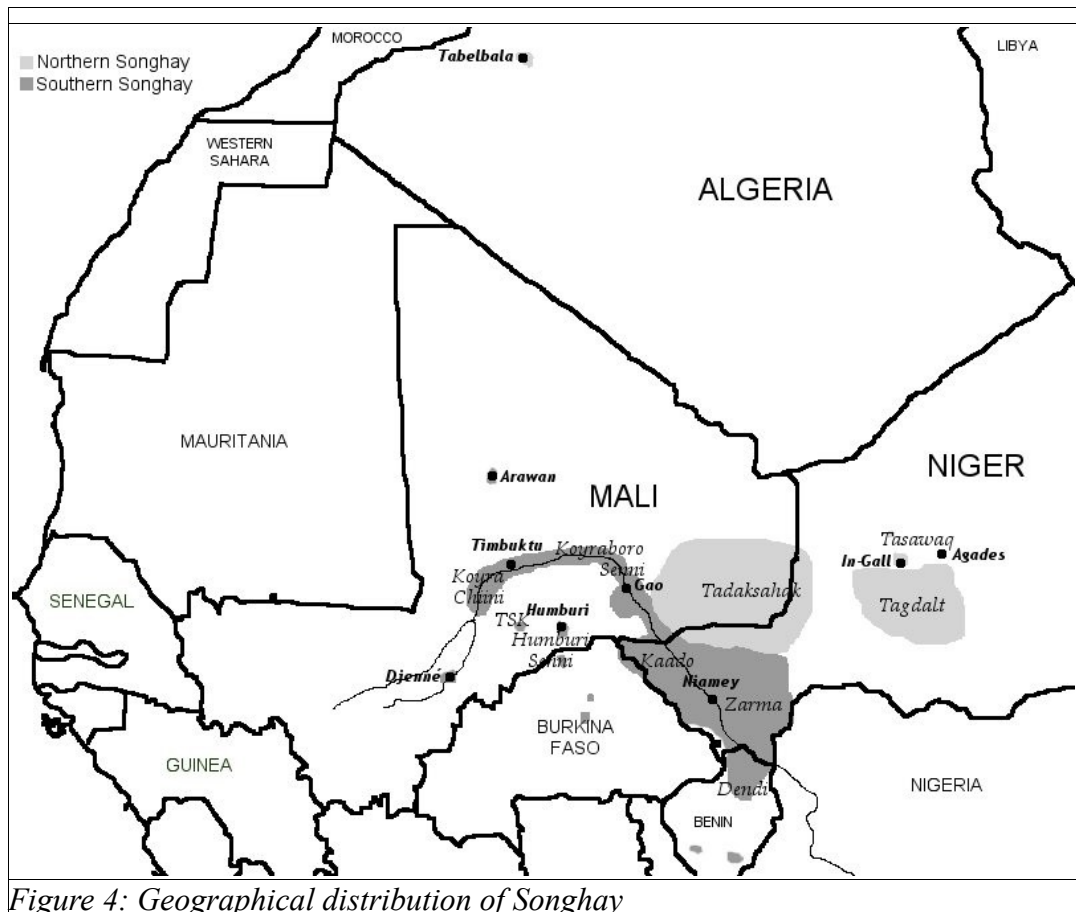


Figure 3: The oasis of Tabelbala

Kwarandzyey (*kʷɑrɑ n dzyəy* “village language”, or *lbəlbaliyya* “Belbali”; Korandjé in earlier literature) is spoken by about 3000 people, called Belbalis, from the villages of Kwara (Zaouia), Ifrənyu (Cheraia), and Yami (Makhlouf) in the oasis of Tabelbala in southwestern Algeria, about halfway between Bechar and Tindouf. There are significant numbers of Belbalis in Tindouf, and smaller numbers in Bechar and Oran. As a result of earlier emigrations, Belbali origins are claimed by a number of Saharan groups, including the people of Mlouka near Adrar (Champault 1969), some *haratin* of Aduafil in Morocco's Draa valley (Ensel 1999:52), and the Idaw Ali of Mauritania (Ould Khelifa 1998:71); none are reported to speak Kwarandzyey. The Belbalis themselves are ethnically heterogenous; like other oases of the region, they have traditionally maintained strong social distinctions between “black” slaves and *haratin*, said to have come from West Africa, and “white” Berbers, Arabs, and marabouts, identified as members of various tribes to the north.

As already recognised in Cancel (1908), Kwarandzyey belongs to the Songhay family, a close-knit group of languages spoken mainly in the Niger valley in northern Mali and Niger – more than a thousand kilometres from Tabelbala. The wider affiliation of Songhay has not been established, but Greenberg (1963a) classified it as Nilo-Saharan. Within Songhay, as recognised by Nicolai (1981), Kwarandzyey belongs to the Northern subgroup, whose other members are spoken in the deserts of Niger – Tasawaq at the oasis of In-Gall, the extinct Emghedesie at nearby Agades, and Tadaksahak and

Tagdal by the nomadic Idaksahak and Igdalen. Northern Songhay languages share a large proportion of their basic vocabulary and grammar with the rest of Songhay, but show some specific attributes unique to them - notably second person plural **Vndi* rather than Southern **wor*; imperfective marker *b* rather than Southern (*g*)*o*, genitive marker *n* rather than \emptyset , and, in a certain subset of words, γ rather than : or *g*, and a non-sonorant coronal rather than *r*. It is not clear whether all of these are innovations – a question beyond the scope of this investigation – but at least one of Northern and Southern Songhay must be a valid genetic unit, and the former appears much more probable. On the 100-word Swadesh list, excluding post-split loanwords, Kwarandzyey shows 90%-93% similarity with Tadaksahak versus 83% with Koyra Chiini (Western Songhay) and 81% with Zarma (Eastern Songhay); see Appendix.



1.2.2 Contact with Berber and Arabic

Songhay-Berber contact probably started when Saharan Berber tribes first reached the

Niger bend, before the split of Northern Songhay; a few likely Berber loans are found in most of southern Songhay, including KC/KS *tasa*, Kaado *tàsà* “liver”; KC/KS *wala* “even”; and in Western Songhay alone, DC/KC *faar(u)* (postvocalic *d > r* regularly) “thirst” and *maasu* “middle”. Nicolai (1990; 2003) has argued that Berber elements played a core role in the formation of Songhay, but this claim is unconvincing (Dimmendaal 1992; Kossmann 2005).

At least one Arabic loanword appears likely to have entered Songhay before the split of Northern: Kwarandzyey *akama*, KC/KS *alkama* “wheat” < Ar. *al-qamḥ*-. Proto-Northern Songhay had probably already developed a phoneme *q*, judging by the pan-Northern sound change *k > q / _o* (Nicolai 1981); if this had independently entered Kwarandzyey via Arabic or Berber, it should at the least have preserved the *q*, and there are no other Arabic loans in Kwarandzyey that have lost *ḥ*. If this is correct, then the split of Northern Songhay can be securely dated to the Islamic period, and hence postdates the seventh century; however, although wheat was rarely grown in the Sahel, the possibility remains that the term was borrowed from southern Songhay after the split.

Intense contact with Berber probably began at the stage of proto-Northern Songhay: every Northern Songhay language shows intense Berber influence, and although the fact that each of them has remained in contact with Berber to the present makes it impossible to securely reconstruct any particular Berber loanwords for proto-Northern Songhay, grammatical evidence, notably in the number system (see Numerals) confirms that Berber influence was already operative. At present the only branch of Berber in a position to influence Songhay is Tuareg, the source of most Berber elements in Northern Songhay languages other than Kwarandzyey, although Kwarandzyey itself contains no securely verified Tuareg loanwords. However, Tetserrét, whose closest relative is Zenaga, is still spoken by a small Tuareg subgroup in Niger, suggesting that Western Berber (the branch represented by Zenaga+Tetserrét) must have been spoken over a much wider area before the Tuareg expansion, and Western Berber loanwords are found in Tadaaksahak as well as Kwarandzyey, making them another possible source of influence at the proto-Northern Songhay level (Souag 2010).

The earliest known mention of Tabelbala (as Tabelbert) is by Raymond Lull in 1283 (Champault 1969:24), followed shortly by al-ʿUmari in 1337 (Hopkins & Levtzion 1981:276) - in both cases describing routes across the Sahara. Al-Bakri (d. 1094) specifically states that there was “no inhabited place known to the west and south of [Sijilmāsa]” (ibid:65). We can thus assume that Tabelbala was founded, or at least became significant for traders, between about 1050 and 1250, and hence during the Almoravid or Almohad period, well before the Songhay Empire emerged.

Champault (1969:27) records oral traditions indicating that the first founders of the oasis were the Lamtūna, a Ṣanhāja (Zenaga) tribe prominent in the trans-Saharan trade (Cleaveland 2002) and in the Almoravid movement. An oral tradition I heard, of uncertain status, claimed that the Almoravids settled a caravan of captives at the oasis to farm it, implying that the language was introduced when the town was founded. If this claim is correct, then it is tempting to identify these captives with those that the Almoravids would have taken in their attack of about 1100 AD (recorded by al-Zuhri) on the desert city of Tadmākkāt in eastern Mali, an important link in the trade between Songhay-speaking parts of the Niger valley and the north (Moraes Farias 2001:cxliv); this might explain how a northern Songhay language improbably ended up more than 1500 kms from its surviving relatives. However, this cannot be checked against other data. No mention of the language of Tabelbala has so far been reported in precolonial sources, and the tombstones in the main cemetery, *imamaḍḍan*, include several seemingly Berber names, but none that can be confidently identified as Songhay.

After reaching Tabelbala, early speakers of Kwarandzyey may still have been subject to Zenaga influence – particularly if the oasis was then dominated by the Lamtūna, as oral tradition and the village name *Yami* (Makhlouf) < Zenaga *iḍrmi* “town” suggests. However, the language spoken in the mountains to its north and west would probably, then as now, have been Atlas Berber (Tashelhiyt + Tamazight). This is the most likely source of many attested Berber loans, including words like *agʷrəs/aglas* “grain shoots”, *fərtəttu* “swift/swallow (bird sp.)”, *tsabsəwts* “sorghum”, *agəllid* “king”. This influence was not mediated solely by long-distance trade. By the 19th century, Tabelbala became a

tributary of the Tamazight-speaking Ait Atta confederation, which emerged in southern Morocco in the 16th century; this continued until the French conquest in 1907. The dominant families of Ifrānyu (Cheraīa) claim descent from its Ait Isfoul sub-tribe, and a few families of their Ait Khebbach cousins, who have settled in Tabelbala over the past century, still speak Tamazight.

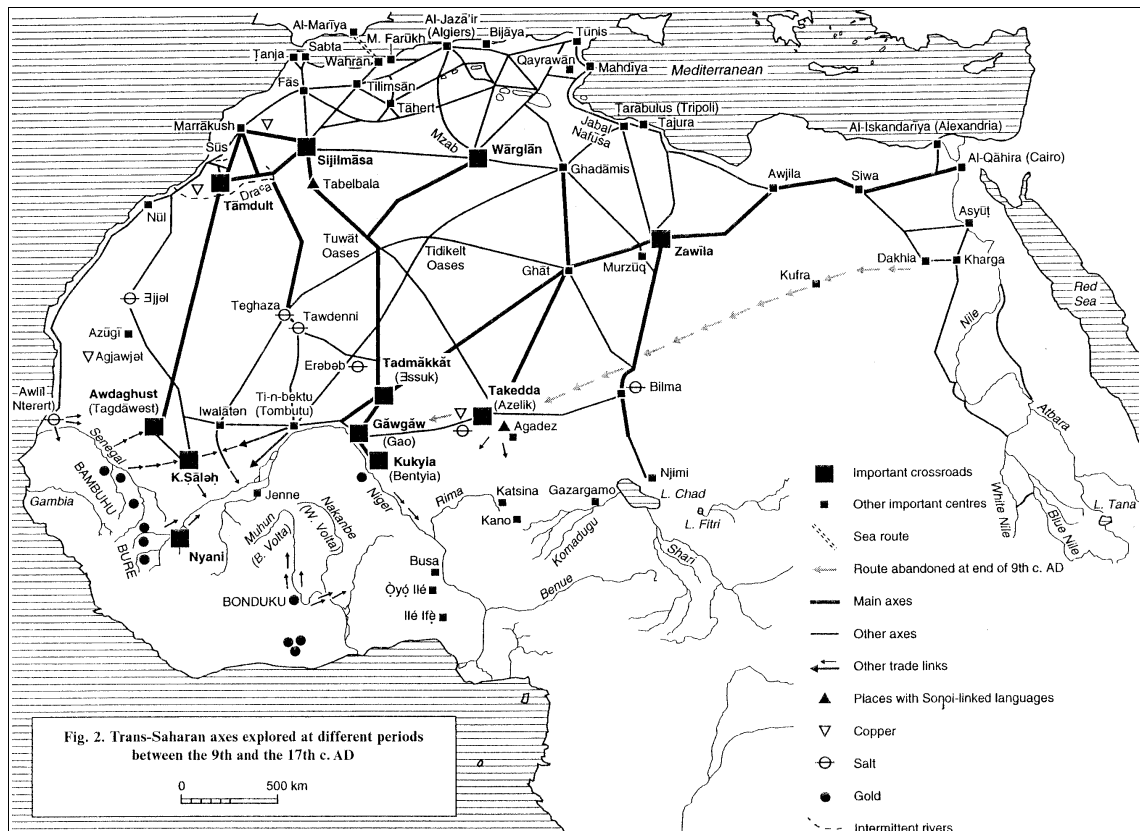


Figure 5: Premodern Trans-Saharan trade routes (Moraes Farias 2001)

Zenati Berber, the result of an early expansion from the east, must also have been present for most or all of this period. The oases of Touat and Gourara, linked by trade routes to Tabelbala, begin to be mentioned by the 14th century (Bellil 1999:48). The Zenati innovation $g/k > \check{z}/\check{s}$ is usually absent in Kwarandzyey (as in the Atlas loans above), suggesting minimal Zenati influence; however, it is attested in a handful of words, notably *izri* “throw” < **i-gri*, *awəzza* “big wooden dish” < **awəgra* (Naït-Zerrad 1998:s.vv. GR 2, 11); *aṛṣəm* “dates whose seed has just formed”, cp. Tumzabt *turšimt* < **rkn*. This adds to the complexity of the contact situation. Rather than being able to trace Berber influence on Kwarandzyey to a single source, we must compare at least

three branches of Berber, whose influence has spanned a millennium or more: Western, Atlas, and Zenati. The net effects of this contact are pervasive in the language; 12% of the Swadesh 100-word list is Berber, and another 8%, from Arabic, may have been borrowed via Berber. The following map, based on the map accompanying Galand (1981) plus the author's fieldwork and Bisson (1957) on the Algerian side of the border and the notes of Heath (2002) and Behnstedt (2004) on the Moroccan side, illustrates the diversity of varieties impinging on Tabelbala.

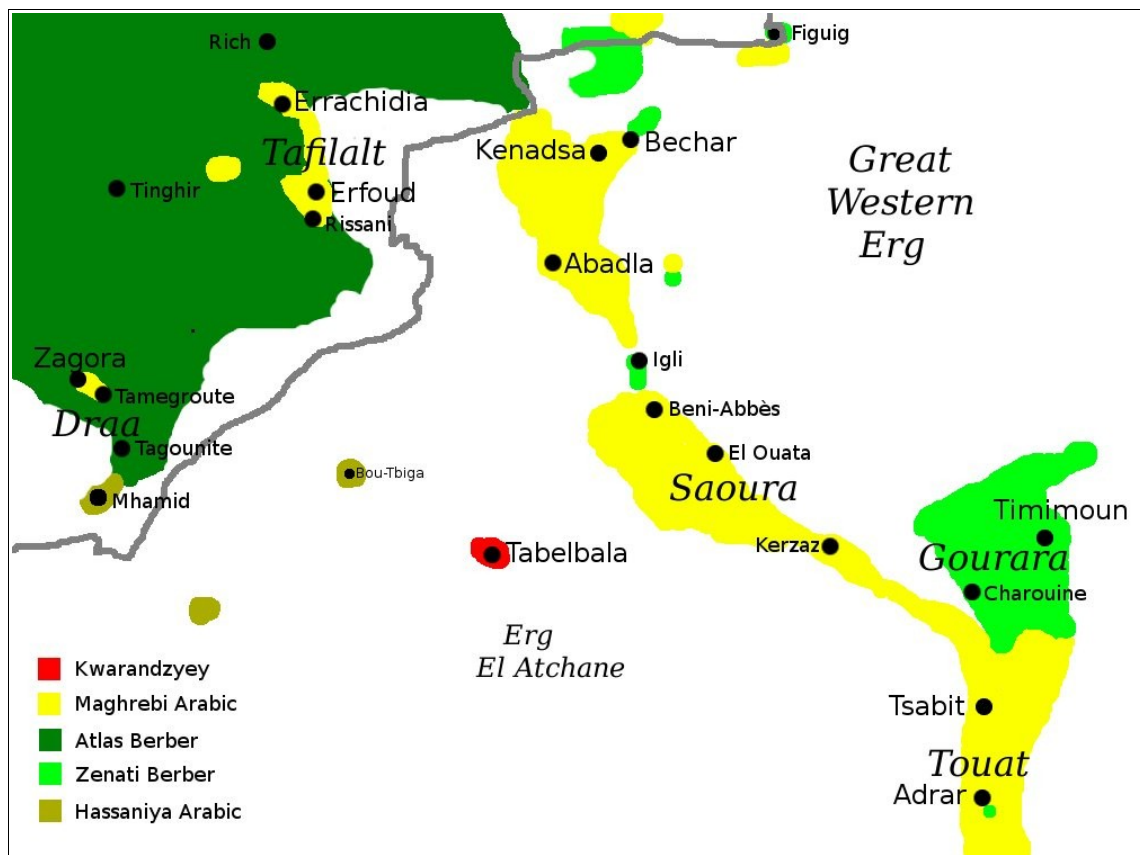


Figure 6: Languages spoken around Tabelbala today
(inhabited areas exaggerated, nomads' movements excluded)

Some level of Arabic learning would have been a prerequisite for religious specialists and long-distance traders even before the Arabisation of the region; all premodern tombstones seen in the oasis use the Arabic language. The career of Sidi Makhlof el-Belbali (d. ~1534) indicates that the oasis was capable of producing Arabic scholars by the 16th century (Hunwick et al. 1995:25). However, comparison with similar situations, such as the Kel Ansar among the Tuareg, suggests that scholarship and trade alone

would have comparatively little linguistic impact, mainly lexical and phonological. The impact of Arabic in Kwarandzyey was substantial even in Cancell (1908), with loans including basic body parts, such as *dhq* “back”, *lɔktsəf* “shoulder”, which are unattested in regional Berber. Several factors may account for this, including the immigration of Arab families (the dominant family of Kwara/Zaouia claim Arab ancestry), the regional influence of Arabic-speaking nomads, and the gradual Arabisation of other regions, such as Tafilalt and Touat, that were linked by trade to Tabelbala. It is difficult to date any of these events, but the spread of Arabic in the western Sahara had begun by the 14th century (Whitcomb 1975), and by the 16th century, Arab Bedouins were taking tribute from both Tabelbala and larger regional centres, according to the 16th century geographer Leo Africanus (1896:147): “The generation of Dehemrum, which are saide to deriue their petigree from Deuimansor ... haue tributarie vnto them the people of Segelmesse [Sijilmasa, near modern Erfoud], of Todgatan [Todgha, north of Tinghir], of Tebelbelt [Tabelbala], and of Dara [Draa]”. Contact with Arabic has thus been significant for half a millennium or more. Reflexes of *q* in Arabic loans include both Bedouin *g* (eg *lɔwrəg* “tea leaves” < ورق) and urban *q* (eg *iqad* “snap” < قرض); the latter may often reflect a Berber intermediary. Arabic *j*, usually *z/ž*, is sporadically reflected as *g* (eg *gumṁ* “palm heart” < جمار), a phenomenon difficult to explain in terms of current regional dialects.

1.2.3 Current sociolinguistic attitudes

At present, Kwarandzyey is endangered. All Belbali men, and most women, speak dialectal Arabic – usually southwestern Maghrebi, although Hassaniya influence is observable especially in those with ties to Tindouf. Most speakers claim to speak only Arabic to their young children, and in Ifrənyu people in their twenties can be found who have only a very limited passive knowledge of Kwarandzyey. The *djemaa* (council of elders) of Ifrənyu collectively resolved to give up Kwarandzyey in the 1970s, hoping to improve their children's educational chances by making sure they knew Arabic from the start (Tabelbala has had a government school since just before independence); the people of Kwara (Zaouia) followed suit in the 1980s. Nonetheless, Kwara's children have continued to acquire Kwarandzyey in their early teens from older teenagers.

The isolation and poverty of Tabelbala, and the regionally widespread perception that dark skin correlates with servile ancestry and lack of strong tribal connections, all contribute to a very low status for Kwarandzyey. On top of this, Belbalis only form a slight majority in the oasis; more than a third of the inhabitants come from elsewhere, mainly Arab ex-nomads settled over the past century. Some of the older generation of immigrants learned Kwarandzyey, but this is unheard of among younger ones, who consider it difficult and pointless. The Arabs of the region group it together with Berber under the term *šəlha*, with derogatory overtones; more than one Belbali quoted me the proverb *ššəlha ma hu klam, wəddhən ma hu lidam* “Shelha is no more speech than oil is sauce.”

The Berber-speaking Ait Khebbach families are also ex-nomads who settled down in the oasis over the past century, some as late as the 1970s; their language shift has been even more rapid, and their children rarely if ever speak any Berber. A few families in Ifrənyu married Moroccan Berber-speaking wives; their children do not speak the language either. I found no Belbali who could speak Berber as a second language, making it in this respect even lower on the sociolinguistic scale than Kwarandzyey.

1.2.4 Sources

The linguistic bibliography for Kwarandzyey is short. It begins with Cancel (1908), who gives a useful, if confused, grammatical sketch; a wordlist arranged by topic; and a couple of glossed sample texts. Lt. Cancel was a linguistically untrained French army officer in the Compagnie Saharienne of Touat, who travelled to Tabelbala in May 1907. Champault (1969), an anthropological description of the oasis, includes a substantial number of words, phrases, and rhymes in Kwarandzyey. Champault spent a total of two and a half years in the oasis, returning several times. She later began a French-Kwarandzyey dictionary (n.p.), consisting of 185 hard-to-read handwritten pages from A to G. Tilmatine (1996) contains a little original fieldwork filled out by a larger number of phrases from Cancel and Champault, and provides no information allowing the reader to distinguish his own fieldwork from his conjectural re-transcriptions of

Cancel and Champault. Secondary sources using these materials include Nicolai (1979), on the phonology of Cancel's transcriptions; Nicolai (1981), a comparative study of Songhay phonology; Kossmann (2004a), analysing mood, aspect, and negation; and Kossmann (2004b), discussing the possibility of a Kwarandzyey-like substratum in the Gourara oases. My data here, unless otherwise stated, is based on four months' fieldwork in Tabelbala plus a number of sessions by phone; most of it comes from Kwara (see Acknowledgements), but I consulted speakers from Ifrenyu (including Bina ed-Dati) and Yami too. It includes about 1592 A6 pages of written fieldnotes across 10 notebooks, referenced as N x py, and 6 hours 40 minutes of recordings that have been transcribed, referenced by dates followed by file numbers in the format YYYY-MM-DD/nnn.

1.2.5 Phonology

The vowel system distinguishes lax ə , ũ [ʊ] (and, in final syllables, ə [ʌ]) from tense a [a], i , u , ɑ [ɑ], and marginally u [o]; lax vowels, as elsewhere in North Africa, cannot easily occur in open syllables, while tense ones can. The loss of postvocalic r has made many formerly allophonic distinctions phonemic, eg ha [ha] “ask” < *ha vs. hɑ [hɑ] “play” < *hor . ũ can usually be analysed as an allophone of ə next to rounded labials/velars, but sometimes appears in positions incompatible with this analysis, eg dzũdz / dzədz “pound”. Pharyngealised consonants are followed by pharyngealised vowels (not always transcribed, since not contrastive in this position); in addition, pharyngealised vowels often pharyngealise preceding vowels in the same word, thus eg a-hha “s/he asked” vs. ɑ-hhɑ “s/he played.” Morpheme-final i/u in words of two or more moras, and in tsi “say”, is normally deleted unless the morpheme falls at the end of an intonation group. If this leaves a final consonant cluster, a schwa is inserted, eg tnu “get up” > tən . Nasalised vowels are occasionally preserved in French loans.

The consonant system is as follows:

Table 2.

b b ^w	t ṭ d ḍ		k k ^w g g ^w	q ^w		(ʔ)
	ts dz					
m m ^w	n					
f f ^w	s ṣ z ẓ	(š ž)		x x ^w γ γ ^w	ħ ʕ	h
w	l ḷ	y				
	r ṛ					

Older speakers do not distinguish *š/ž* from *s/z*. The distinction between *t* and *ts* is phonemic in some contexts (eg *attən* “he got up...” vs. *attsən* “it is heavy”), but is unstable in many words. Some speakers marginally distinguish *k/g* from *kç/gy* in non-emphatic contexts, using the former in borrowings; many shift *k/g* in native words in such contexts to *ts/dz*. A bilabial click is attested in one baby-talk word: *OaOa* “eat!”; cp. Moroccan Arabic baby talk *ħabba* “bread” (Ferguson 1964). Semivowels *w/y* are often deleted between two *a*'s, obligatorily in the case of the 1pl object suffix.

Kwarandzyey has lost lexical tone, although this was present in proto-Songhay and proto-Northern Songhay; this has created a number of homonyms, eg *ħəmni* “fly” (**ħəmni*) = “flour” (**ħàmni*).

1.3 Mechanisms of morphosyntactic influence

1.3.1 Direct

The most easily detectable way of introducing elements from one language into another corresponds to what Muysken (2000) labels *insertional codeswitching*: putting a clitic/stem/word/phrase from one language inside an utterance primarily belonging to the other language. Such insertions are synchronically readily detectable – by linguists and bilingual listeners alike – to the extent that the languages involved have different vocabularies. A sufficiently common or useful insertion may become accepted as a part of conventional recipient language usage by monolinguals (if any) as well as bilinguals; this yields lexical *borrowing*, or, in the terminology of Matras (2009a), *material replication*. When the influence is sufficiently low, borrowing may be limited to words

taken in as morphologically simplex stems. However, given a higher rate of even non-fluent bilingualism it tends to go rather further, introducing analysable words (stems together with their bound morphology, eg English plural *cherub-im*) and phrases (like English *per annum*). In this data, these tend to be drawn from the high-accessibility end of Myers-Scotton's (1993:144) empirically based implicational hierarchy of EL Islands, as expected on the assumption that material borrowing derives from insertional codeswitching – principally, formulaic expressions such as *in ša allah* “God willing” (her level 1), time and manner adverbials such as *əl-waḥd-a* “one o'clock” or *bə-l-ṣani* “on purpose” (her level 1/2), and quantifier expressions like *təlt əsnin* “three years” (her level 3). Her less accessible levels 4-6 (non-quantifier, non-time NPs as VP complements, agent NPs, main finite verbs) appear to be unattested here.

Difficulties for the historical linguist arise when insertions cannot easily be distinguished from non-insertions which are similar in form and meaning, due to confusing factors such as common ancestry, previously conventionalised borrowing, and chance resemblance. Such cases can be confusing even for native speakers, and often result in *blending*, or *double etymology*: a form whose development can only be described by taking into account two separate etymologies, as when native speakers of French use English *library* to mean “bookstore”, or Turkish *okul* “school” < Turkish *oku-* “read” and French *école* “school” (Zuckermann 2004).

In this case, common ancestry is rarely relevant – as noted, Berber and Arabic separated long enough ago that obvious cognates are very rare, and neither is detectably related to Songhay. The possibility that a loan came in from a different variety of the donor language, on the other hand, is significant; the Arabic elements in Siwi cannot be coherently understood in terms of modern Egyptian and Bedouin Arabic alone (Souag 2009), nor can the Berber elements of Kwarandzyey all be derived from the Berber languages that have been in contact with it over the past century (Souag 2010). Some specific loans can be assigned to particular sources through variety-specific shifts in sound or meaning (eg $\gamma > \emptyset$ in Kwarandzyey loans from Western Berber); but such specificity is often impossible because all relevant varieties share (or could have shared) the same word in the same form. The possibility that a loan came in at a period before

the variety under discussion was separated from its nearest relatives is hard (though not always impossible) to gauge with Berber, since all varieties are under Arabic influence; Tuareg, having come under significantly less Arabic influence than others, is often particularly useful. With Songhay the task is somewhat easier, since Arabic and Berber influence on most varieties, while present, is relatively low.

When a speaker's fluency in another language is comparable to or greater than his/her fluency in the target language, as in second language acquisition or first language attrition, the result is often *interference* (Muysken 2004) – the use of patterns based on the other language even where all forms come from the target language. The patterns in question may come to be accepted as part of the target language, yielding what Matras (2009a) calls *pattern replication*. Synonyms include *convergence* (Myers-Scotton 2002; cp. Gumperz & Wilson 1971), *structural interference* (Thomason & Kaufman 1988), *indirect diffusion* (Heath 1978). When this occurs as a result of native speakers' bilingualism in another language, as here, it may be termed *metatypy* (Malcolm Ross 1996). This may be divided into *semantic calquing*, the copying of semantic patterns (polysemy, idioms), and *syntactic calquing* or *syntactic borrowing* (Harris & Campbell 1995), the copying of word order patterns or requirements. Semantic calquing is a well-known phenomenon (eg Campbell 1999), exemplified by cases like French *souris* “mouse (animal)” = “mouse (of computer)”, or English *it goes without saying*, which takes its syntactic and semantic structure from French *ça va sans dire* but uses only English words (Katamba 2005:137); its role in the spread of parallel grammaticalisation patterns across languages is emphasised by Heine & Kuteva (2005). One of the clearest cases of syntactic borrowing is the shift of Afghan Arabic from VSO to SOV order under the influence of Turkic and Persian (Kieffer 2000); the fact that, despite the wide variety of Arabic dialects scattered across an enormous area, no Arabic dialect not subject to intense Iranian/Turkic influence is known to have done this allows us to conclude that this development would have been very unlikely without contact.

Whereas most sound-meaning linkages are arbitrary (Saussure 1959:67), syntax and semantics are often motivated, making it harder to tell whether similarities are homologous or accidental. Patterns of polysemy and idioms typically derive from

universally transparent metaphors; thus, as Heine & Kuteva (2005) show, grammaticalisation processes induced by contact follow the same cross-linguistically natural paths, dictated by pragmatic inference, as non-contact-induced grammaticalisation. Word order patterns typically reflect near-universal aspects of language such as subcategorisation properties or information structure. To make matters worse, word order patterns are often drawn from a restricted menu: there are only so many ways to position an adposition relative to its complement. These make it significantly harder to prove influence retrospectively. To make a case, one should ideally:

- show that the pattern allegedly copied entered the recipient language only after contact;
- show that the pattern allegedly copied was in the donor language prior to contact;
- prove (eg through loanwords) that there has been contact between the relevant languages;
- show that the odds of chance resemblance are reasonably low:
 - by showing that relatives of the recipient language less subject to similar influences, if any, usually have not developed the same pattern,
 - or, less convincingly, by showing that the pattern is typologically rare.

As noted above, most of Songhay is under relatively little Arabic/Berber influence, and a few Berber languages show less Arabic influence than most, making this feasible up to a point, although the influence of Arabic on all Berber varieties makes it possible that pattern replication is being underestimated.

1.3.2 Indirect

While matter and pattern borrowing can often be treated separately, matter borrowing often affects pattern – not just semantics (trivially) but syntax as well. As long noted by grammarians, the relationship between specific lexical entries (“matter”) and syntactic patterns can largely be analysed as mediated by word classes: many of the syntactic

properties of a given lexical item can be deduced from the class to which it belongs, rather than having to be restated individually for each lexical item. However, the word class of an item in one language may not map well onto any one equivalent in another, owing to conflicting signals. For example, “adjective” word classes in two languages may be used in similar ways in nominal attribution constructions, but one may model its predicative construction on that used for verbs, while the other's follows that of nouns; or two spatial preposition classes may have similar subcategorisation requirements, but differ semantically, with one always indicating motion while the other can also indicate fixed location. In such cases, matter borrowing creates difficulties for pre-existing patterns; these may be resolved by forcing the borrowed material into existing word classes, but may also be resolved, contrary to Field's (2002:51) suggestion that “previous word class membership is rendered moot by the very act of borrowing”, by creating new word classes modelled on the usage of inserted material, or extending old ones into new domains. In this data set, adjectives in Kwarandzyey provide the most obvious example of the former; the latter is notably exemplified by the growth of prepositions in Kwarandzyey through borrowing, taking over functions previously systematically filled by postpositions.

One of the most conspicuous attributes of certain word classes is the complement position they select for, and this seems to be particularly frequently retained in borrowing. An early attempt to capture this fact is Moravcsik's (1978) generalisation: “A lexical item that is of the ‘grammatical’ type (which type includes at least conjunctions and adpositions) cannot be included in the set of properties borrowed from a language unless the rule that determines its linear order with respect to its head is also so included.” That generalisation is too strong as phrased, as shown by Matras' (2009a:155) examples; it seems to apply to “primary” adpositions whose complements are morphologically bare, but not to “secondary” ones governing the genitive. One way to fix it might be to adopt the claim of Mahootian and Santorini (1996) that “heads determine the syntactic properties of their complements in code-switching and monolingual contexts alike”; as the head of the genitive construction, a genitive particle will automatically determine the position of its complement. However, this runs into difficulties with verbs, since (non-finite) VO verbs may be borrowed/switched into OV

languages without affecting the word order, as in Punjabi (eg Romaine 1995:137). The question will be re-examined in the light of this data.

The conventionalisation of matter borrowing also has profound effects on morphology. Productive morphology is deduced anew by each individual speaker as s/he acquires the language(s) (Clark 1998), from the existence of pairs of words closely related in form and meaning. This has several consequences. At the stem level, where bilingualism and borrowing are both sufficiently common, it can lead to the creation of “correspondence rules” (Thomason 2001:144), productive strategies for mapping items from one language into stems in the other – effectively, inter-lingual morphology. Several cases will be seen below. At the word level, extensive borrowing of words containing morphology can make any morphology productive, no matter how typologically unusual, as long as other words exist that match its input conditions; this is exemplified here by the marginal productivity of borrowed apophonic plurals in both languages, and the full productivity of the Arabic comparative/superlative template in Siwi. This is the usual, and perhaps the only, borrowing path for morphology, as suggested by Moravcsik's (1978) claim that “No bound morphemes can be borrowed unless free morphemes which properly include them are borrowed”; the counterexamples in Harris & Campbell (1995:134), as clitics, are not relevant here. At the phrase level, if sufficiently many of the words in the phrase have also been borrowed, the phrase becomes analysable even for monolinguals, opening up the possibility of generalising its construction to items not previously heard; this appears likely in the case of numeral+counter forms in both languages, although the near-absence of monolinguals makes it difficult to be certain that they are not invoking knowledge of Arabic.

Morphology is not processed in isolation; its analysability depends on the system within which it is embedded. As exemplified in Kwarandzyey, monolingual speakers of a language which does not have gender agreement have no motivation to analyse semantically irrelevant gender morphology, unless they also borrow enough gender-marked categories such as adjectives or finite verbs. Field (2002) similarly suggests that fusional morphology is unanalysable in a typologically agglutinating language, and

that no morphology is analysable in an isolating one. Since typological change in this respect is known to occur, the claim cannot be airtight. If “fusional” is, plausibly, restricted to morphology expressing more than one category simultaneously, then it cannot be tested here, as dialectal Arabic has few such morphemes outside of finite verb inflections; if, however, it is taken to include words simultaneously expressing a concept and a morphological category, then the borrowing of templatic plurals in Kwarandzyey is a counterexample.

The mechanisms indicated above bridge the gap between synchronically observed language contact phenomena – codeswitching and interference – and diachronically observed change resulting from contact influence, in conformity to the principle of uniformitarianism. In the following chapters I will reconstruct contact-induced change in Kwarandzyey and Siwi through the comparative method and test the explanatory adequacy and relative frequency of these processes.

2 NP features: person, gender, number, definiteness

In all the languages under consideration, agreement in number and person is found between noun phrases and pronouns referring to them. In Arabic and Berber, agreement in gender is also found; this feature can be predicted only from lexical properties of the head noun and not in general from the semantic properties of the referent of the phrase. The elements displaying agreement differ significantly; Arabic and Berber show it on adjectives, pronouns, and verbal agreement markers, whereas in southern Songhay it is limited to pronouns and (in Eastern Songhay) demonstratives. Definiteness marking in Arabic appears on adjectives as well as nouns within a single NP, whereas in Berber it is generally unattested and in Songhay it is usually marked only once within the NP.

Most Berber varieties, along with Classical Arabic, also mark case on head nouns; this is an agreement feature for adjectives in Classical Arabic, but not in Berber. However, all current spoken dialects of Arabic and some easterly Berber varieties have lost this. Songhay has no case marking on head nouns; grammatical function marking for noun phrases is handled by adpositions, or in one case by an aspect marker.

2.1 Person

Personal pronouns, and more generally person agreement markers, are well-known for their diachronic stability; cases of borrowing are attested (Thomason 2001:83), but typically these involve either languages with “open” sets of pronouns expressing an indefinitely large range of politeness distinctions, like Indonesian, or closely related languages, like English *they* from Old Norse. Gap filling is another motivation for pronoun borrowing, eg the 1st person inclusive in Mawayana from Waiwai (Carlin 2006:320), and external influence leading to paradigm reshaping has sometimes been suggested, eg in the development of feminine plural pronouns in Tariana under East Tucanoan influence (Aikhenvald 2002:64).

In principle, person could be entirely independent of gender and number. In practice, person morphemes often vary with both and show unpredictable syncretisms. All the

languages relevant to this discussion have three persons, 1st (with no inclusive-exclusive distinction), 2nd, and 3rd; all distinguish singular from plural in each of these persons. Both Arabic and Berber additionally distinguish gender in some forms, and some Arabic varieties (including Hassaniyya) have retained a dual number. Songhay has neither gender nor a dual, but some varieties distinguish a logophoric 3rd person from an unmarked one.

2.1.1 Siwi personal pronouns

Siwi distinguishes the following paradigm:

Table 3.

	Independent	Subject agreement	Dative agreement	Object clitics	Objects of <i>gən/γur-</i> “at”, <i>g/əgd-</i> “in”, <i>səg/sgəd-</i> “from”, <i>əf/fəlla-</i> “on”; possessors of certain kinship terms	Objects of <i>msabb / mišan</i> “because of”	Genitive
1 sg	<i>niš</i>	<i>-ax</i> (-γ/ʕ- before dat. suff., usually <i>-ax</i> > <i>-a</i> before 2 nd pers. obj. or primary prep. +pn.)	<i>-i</i>	<i>-i</i>	<i>-i</i> (Ø / _V)	<i>-i</i>	<i>-nnəw</i>
2 m sg	<i>šəkk</i>	<i>-aʔ</i> (-ʔ before dat. suff.;	<i>-ak</i>	<i>-ek</i> (šək w/ 1sg subj)	<i>-k</i>	<i>-ăk</i>	<i>-nnək</i>
2 f sg	<i>šəmm</i>	<i>ʔ+t</i> > <i>tt</i> ; imp. Ø)	<i>-am</i>	<i>-em</i> (šəm w/ 1sg subj)	<i>-m</i>	<i>-ki</i>	<i>-nnəm</i>

3 m sg	<i>nəttə</i>	<i>y-</i>		<i>-t</i> (after suffixes), <i>-a</i> (after verb stem)		<i>-ǎh</i>	
3 f sg	<i>ntatət</i>	<i>t-</i>	<i>-as</i>	<i>-tət</i> (after suffixes), <i>-et</i> (after verb stem)	<i>-s</i>	<i>-ha</i>	<i>-nnəs</i>
1 pl	<i>nišni / nični</i>	<i>n-</i> (hort. <i>n-...-wət</i> for group of 3 or more)	<i>-anax</i>	<i>-anax</i>	<i>-nax</i>	<i>-na</i>	<i>-nnax</i>
2 pl	<i>nknǔm</i>	<i>-m</i> (imp. <i>-wət</i> , except w/ dat. suff.)	<i>-awən</i>	<i>-ewən</i> (<i>nknǔm</i> w/ 1sg subj)	<i>-wən</i>	<i>-kǔm</i>	<i>-nwən</i>
3 pl	<i>ntnən</i>	<i>y-...-n</i>	<i>-asən</i>	<i>-tən</i> (after suffixes), <i>-en</i> (after verb stem)	<i>-sən</i>	<i>-hǔm</i>	<i>-nsən</i>

A few verbs (notably “come”, “go”, “say”, “give”) have irregular conjugations; for these, the form of the stem varies depending on the subject and dative agreement markers as well as on aspect/mood. The *a* of 1/2SgSubj is elided after vowels.

Contra Vycichl (2005:220), the independent forms are used for 2nd person direct objects with 1st person singular subjects in all tenses/aspects, not just the future, eg *ṭəyyəb-a-šək* “I beat you” (N2p130), *zri-x-ənkǔm* “I saw you pl.”, *ga-zra-nknǔm* “I will see you pl.” (N2p9). Vycichl's analysis (*ibid*) of the distribution of 3rd person endings agrees with my data, and is summarised in the table.

A contrast that at first sight looks as if it were between 1st person dual and plural is apparent in hortative forms, where *-wət* is normally added to a verb in *n-...* only when more than one person besides the addressee is included in “we” (there is some disagreement on this requirement among consultants - N3p75.) However, it fits the

paradigm better to decompose this into *n*-...marking the 1st person plural (whether for 2 or more) and *-wət* as an imperative plural marker determined by the number of addressees, taken as all the people in the “we” group except the speaker.

The system is overall clearly Berber, and some of the differences result from purely internal development. The use of full pronouns rather than clitics for 2nd person direct objects after the 1st person singular contrasts equally with other Berber languages and with Arabic. Likewise, the loss of *t*- in the second person (contrast, even in its nearest neighbours, *t*-...-*t* / *t*-...-*im* in Awjila, *t*-...-*t* / *t*-...-*am* in El-Fogaha) cannot adequately be explained by contact with Arabic, where precisely that prefix is characteristic of the 2nd person in the imperfect; more likely it represents a simplification influenced perhaps by the merger of verbal adjectives (which historically take no prefixes, eg Awjila *mell-ât* “you are white”) with verbs (see Adjectives.) There are other Berber languages in western Algeria which have lost this *t*- (Destaing 1907:94), but in them this is a special case of a widespread lenition of initial *t*- > *h*- > \emptyset - which does not occur in Siwi. A better case can be made for Arabic influence in the addition of the prefix *y*- to the 3rd person plural subject marker (unique within Berber; El-Fogaha and Awjila, like every other Berber language, simply have *-n*.) The singular 3rd person forms, *y*-... and *t*-..., are (due to common inheritance) strikingly similar to their Arabic imperfect equivalents *ya*- and *ta*-; an imperfect bilingual could easily be tempted to extend the parallelism to the plural, which in Arabic is *ya*-...-*ū* (feminine *ya*-...-*na*), and since Siwi has lost the participle (see Demonstratives and relative clauses), the resulting hybrid *y*-...-*n* would not conflict with any other form of the verb. Given how many innovations Siwi appears to share with other Berber languages such as El-Fogaha or Awjila, this seems more plausible than postulating that every Berber languages except Siwi shares the loss of *i*- as a common innovation, as Vycichl (2005:228) implies. On the other hand, internal development, by analogy to the inherited masculine plural circumfix *i*-...-*n* for nouns and adjectives, cannot be excluded.

The most conspicuous difference from other Berber languages is clear: the borrowing of pronominal morphemes from Arabic to express pronominal complements of the Arabic loan *msabb* “because of / for the sake of”:

- 2.1 *msabb-ǎk slámd-γ-asən i tərwáwen láħsab*
 because-2M teach-1S-3PDat to children arithmetic
 For your sake I taught the children arithmetic. (2009-06-28)
- 2.2 *uyí-x lxátəm dá-wo-k msabb-há*
 buy-1Sring MOD-DEM.M-2:M because-3F
 I bought that ring for her sake. (2009-06-21)
- 2.3 *γə-dwál msabb-húm*
 3M-return because-3P
 He returned for their sake. (2008-05-05/294)

The specific forms chosen are dialectologically interesting: 3MSg is *-ǎh*, and there is no gender distinction in the plural. Since local Bedouin Arabic maintains gender distinctions in the plural, and mainstream Egyptian Arabic uses *-u* for 3msg., this aligns them with the Western Desert oases, which agree on both features (Woidich & Behnstedt 1982; Behnstedt & Woidich 1985:I:154). These preposition+pronoun units are attested in my data only in elicitation, and the short *ǎ* in 2M is phonologically anomalous within Siwi. However, several factors nonetheless combine to lead me to consider them a part of Siwi, rather than an artefact of elicitation: 1) the sentences I used were with an unrelated Arabic form, *min 'ajl-* “for the sake of”; 2) the form *msabb* “because of”, while it derives from Arabic *min sabab-* (compare Yemeni Arabic *min sibb* “because of” (Piamenta 1990)), does not seem to be attested in Egyptian Arabic (Hinds & Badawi 1986) nor in Cyrenaican Arabic (Panetta 1943), both of which typically use *šašān*; 3) it would be surprising if *msabb* (which is attested with nominal objects – see Adpositions) was not able to take pronominal objects, and all the more surprising if, in an otherwise Siwi sentence, a speaker should substitute a nonce semi-Arabic form for a familiar Siwi one; 4) more than one speaker independently confirmed them on separate occasions.

A similar case is found in an Arabic defective imperative not included above: *hayya*

“come on!” (already attested in Minutoli (1827:365): – هَيَّيْ <hayya> “Rüste dich!”), pl. (addressing more than one person) *hayyu*, eg:

- 2.4 *háyy-u*, *xlaṣ* - *tláččənt* *t-ǔmmá*.
 come on-P finished pot 3F-cook
 Come on, it's finished – the pot has cooked. (2009-06-25)

Both are examples of the relatively unusual phenomenon of borrowing inflected words as such, rather than as stems, to be compared to the insertional borrowings discussed in the Numerals chapter.

Apart from these, a couple of systematic differences emerge on closer examination. In particular, one notes the consistent absence of gender distinctions in the plural. This is a more general feature of Siwi, extending to demonstratives and (optionally) adjectives as well; however, such distinctions are very well-preserved throughout Berber, including every other eastern variety on which I have information. Thus:

Table 4.

	1m. pl.	1f. pl.	2m. pl.	2f. pl.	3m. pl.	3f. pl.
Tumzabt – standalone	<i>nəšnin</i>		<i>šəčwim</i>	<i>šəmmiti</i>	<i>nətnin</i>	<i>nətniti</i>
– dative	<i>anəγ</i> (preverbal <i>aγən</i>)		<i>awəm</i> (preverbal <i>awən</i>)	<i>ačəmt</i> (preverbal <i>ašəmt</i>)	<i>asən</i>	<i>asənt</i>
Sened – standalone	<i>chnini</i> (/šnini/)		<i>klimi</i>	<i>klimti</i>	<i>nitni</i>	<i>nitenti</i>
– dative	<i>nər'</i> (/nəγ/)		<i>koum</i>	<i>koumet</i>	<i>sen</i>	<i>sent</i>
Douiret – standalone	<i>nišnin</i>	<i>nišinti</i>	<i>knim</i>	<i>kimmiti</i>	<i>nitnin</i>	<i>nitinti</i>
– dative	<i>na</i>		<i>wīn</i>	<i>kmit</i>	<i>sin</i>	<i>snit</i>
Nafusa – standalone	<i>néččen</i>	<i>néččent</i>	<i>šékwen</i>	<i>šékmet</i> / <i>šékwent</i>	<i>nīten</i>	<i>nītent</i>
– dative	<i>ānağ</i>		<i>āwen</i>	<i>āwent</i> / <i>ākmet</i>	<i>āsen</i>	<i>āsent</i>
Ghadames –	<i>nekkenīn</i> (m=f)		<i>šəkwīn</i>	<i>šəkmatīn</i>	<i>əntenīn</i>	<i>əntnatīn</i>

standalone					
– dative	<i>aneε</i>	<i>awən</i>	<i>akmet</i>	<i>asen</i>	<i>asnet</i>
Awjila – standalone	<i>nekkenî</i>	<i>kemmîm</i>	<i>kemmîmet</i>	<i>nehîn</i>	<i>nehînet</i>
– dative	<i>-dikkenî</i>	<i>-ikîm</i>	<i>-ekmêt</i>	<i>-isîn</i>	<i>-isnet</i>
El-Fogaha – standalone	<i>nekkênî</i>	<i>éknī (m=f)</i>		<i>itâni</i>	<i>itentîn</i>
– dative	<i>-anağ</i>	<i>-awen</i>		<i>-asen</i>	<i>-asnet</i>
Siwa – standalone	<i>nišni</i>	<i>nknŷm</i>		<i>ntnən</i>	
– dative	<i>-anax</i>	<i>awən</i>		<i>-asən</i>	

Gender distinction in the 1st person plural may be innovative – it is very rarely made in affixes as opposed to independent pronouns (André Basset 1952:31) – but it seems unlikely that practically all Berber varieties would independently have innovated a 2nd and 3rd person gender distinction. This implies that Siwi has innovated in discarding gender distinctions.

The Bedouin Arabic of Libya and western Egypt retains masculine-feminine gender distinctions in the plural; I recorded forms like *hin gālan* “they (f.) said” and *intən giltən* “you (f. pl.) said” from a person from Matrouh (2008-04-14/168), and heard similar forms from the Bedouin inhabitants of Maraqi just west of Siwa. Eastern Libyan Arabic retains the distinction in the 2nd and 3rd persons (Owens 1984:91), as do the dialects of central Libya (Caubet 2004). Contact with such dialects obviously cannot account for the Siwi situation, not for El-Fogaha's loss of it in the 2nd person plural. However, a well-known characteristic of sedentary dialects in Egypt and North Africa is the merger of masculine and feminine in the plural. In the Nile Valley, this is the norm; the exceptions, in the south around Luxor and in a few villages of the northeast (Behnstedt & Woidich 1985:I:77, II:142), are probably related to Bedouin influence. The same applies in all of the Egyptian oases (Drop & Woidich 2007:45; Woidich & Behnstedt 1982:53). Independent evidence makes it clear that Siwa has had intense contact over a long period with some sedentary Arabic variety (Souag 2009); it thus seems very plausible that contact with such a variety was what made Siwi, alone among eastern (perhaps all) Berber varieties, lose gender distinctions in the plural.

However, El-Fogaha's loss of them in the 2nd person plural, without any known contact with such sedentary Arabic varieties, opens the possibility that contact merely intensified a trend that had already begun.

Another important difference, not directly related to contact, is less obvious: whereas in most Berber varieties the dative pronominal suffixes are mobile clitics, in Siwi they have become agreement markers which occur whether or not an NP indirect object is present, even when the indirect object is a non-specific indefinite, as in:

- 2.5 *la* *taš-as* *əssərr i* *ħədd*
 NEG give.INT-3SDat secret to anyone
 Don't give a secret to anyone.

Underscoring this, they are now so closely bound to the verb that, for irregular verbs, their presence affects the form of the stem itself. The *-d* “hither” suffix common in Berber has become unanalysable in Siwi, leaving “come” (infinitive *tisdi*) as an irregular verb mainly based on the stem *usəd*, int. *tasəd*, but still retaining *d*-less stems in some forms and stems with a *d* outside agreement in others, thus (in the future): *g-usi-x*, *g-usi-t*, *g-usəd*, *ga-t-usəd*, *ga-n-usəd*, *g-us-əm-d*, *g-us-ən-d*. When dative suffixes are added, these irregularities are ironed out:

- 2.6 *g-us-ən-d* they will come (N1p239)
 g-usəd-n-ək they will come to you (N1p242)
- g-us-əm-d* you pl. will come (N1p237)
 g-usəd-m-anax you pl. will come to us (N1p245)
- g-us-ax* I will come (N1p234)
 g-usəd-ɣ-ək I will come to you (N1p248)

This is unattested elsewhere – but has no counterpart in Arabic either, where datives are clitics with no effect on verb stem selection. It may be viewed as a natural consequence

of the widespread Berber preference for optional clitic doubling with datives, where an optional pronominal clitic anticipates the noun phrase with which it co-refers (for example Ghadames (Calassanti-Motyliniski 1904:23), Kabyle (Chaker 1983:290), Tamazight (Bentolila 1981:265)), combined with the transformation of pronominal clitics into postverbal suffixes with a fixed position, which has occurred not just in Siwi but also in Awjila and El-Fogaha (though not Nafusi or Ghadames). The latter development may be related to Arabic influence, and will be examined in 7.7.

2.1.2 Kwarandzyey personal pronouns

Kwarandzyey distinguishes the following paradigms:

Table 5.

	Independent	Subject (verbs / <i>indza</i>) / Gen. (<i>n</i>)	Direct object / Obj. of preposition / Phrase-final contrastive focus	Object of <i>si/ka</i>
1 sg	<i>aγəy, aγi</i>	<i>ʕa-</i>	<i>-γəy, -γi</i>	<i>γəy-</i>
2 sg	<i>ni</i>	<i>n-</i>	<i>-ni</i>	<i>ni-</i>
3 sg	<i>ana</i>	<i>a-</i>	<i>-a; -ana</i>	<i>a-; ana-</i>
1 pl	<i>yayyu</i>	<i>ya-</i>	<i>-yayyu (-ayu after a)</i>	<i>ya-</i>
2 pl	<i>ndzyu</i>	<i>ndz- (wə- with imperative)</i>	<i>-ndzyu</i>	<i>ndzi-</i>
3 sg	<i>ini</i>	<i>i-</i>	<i>-i; -ini</i>	<i>i-; ini-</i>

The functional difference between the short forms (*a, i*) and long forms (*ana, ini*) in the 3rd person is difficult to distinguish; they seem to be in something close to free variation, and the same sentence is sometimes repeated with a different form. Insofar as they are differentiated, the full form pronouns seem to be used to indicate a shift in reference - to indicate that the referent of a pronoun is not the item most likely to come to mind in context by default, but instead something more distant in the discourse. Since this issue appears not to involve contact, it will not be investigated further here.

Object pronoun forms (long for third person – *ana, ini* not *a, i*) are also used for post-phrasal “afterthoughts” conveying emphasis or contrastive focus, eg:

- 2.7 *ɛ-bɑ* *ħamagir* *ɣəɣ*
 1S-EXIST Hamaguir 1S
 Me, I'm at Hamaguir. (N6p109)

This construction appears not to be documented elsewhere in Songhay; but, while such a position for standalone (not object!) pronouns is grammatical in Arabic or Berber, I am not aware of a variety in which it is conspicuously common, and this is probably to be seen as an endogenous innovation.

When a 3rd person object pronoun is added, verbs of the form CVC or CCVC with a lax vowel (*ə/ũ*) restore their original vocalisation, which is always *u* from *ũ* but is unpredictable from *ə*:

Table 6.

Verb	+3sg obj	
<i>fəz</i>	<i>fəz-a</i>	“dig”
<i>ħəb</i>	<i>ħab-a</i>	“sweep”
<i>mən</i>	<i>man-a</i>	“touch”
<i>dzəb</i>	<i>dzib-a</i>	“bruise, smush” (N6p133)
<i>fəg</i>	<i>fīg-a</i>	“bury”
<i>zbən</i>	<i>zbin-a</i>	“divide”
<i>dzədz/dzũdz</i>	<i>dzudz-a</i>	“pound”
<i>fũf</i>	<i>fuf-a</i>	“grind”
<i>ʃrət</i>	<i>ʃrut-a</i>	“swallow” (< Hassaniya)

Likewise, originally *r*-final verbs now ending in *-ɑ* or *-ya* regain *r*:

<i>tsbɑ</i>	<i>tsbɑr-a</i>	“show”
<i>fya</i>	<i>fyar-a</i>	“open”
<i>ihgɑ</i>	<i>ihgɑr-a</i>	“bully, oppress” (< Arabic)

Two verbs are irregular:

<i>dza</i>	<i>dzam-a</i>	“do, put” (cp. KC <i>daŋ</i> / <i>dam</i>)
<i>tsy</i>	<i>tsyuy-a</i>	“read” (also more regular <i>tsiw-a</i> (Kw.), <i>tsyaw-a</i> (Ifr.))

The Kwarandzyey pronominal paradigm is a fairly recent development from a much more analytical system; unlike the less regular Berber or Arabic pronominal paradigms, all the affixes are transparently derived from the same forms as the independent pronouns. (The irregular change of $\gamma > \ell$ in the 1st person subject forms has parallels in other words, notably *mɑʕɑ* / *maɣɑ* “why?” < Berber *ma-ɣər*; and *ʔsa* / *ʔya* “go up”, unknown etymology.) The form of the second person plural is specifically Northern Songhay (with no similarity to Berber); other pronouns are pan-Songhay (with the historical addition of plural *yu* to some of the 1st and 2nd person plural forms):

Table 7.

	Kwarandzye <i>y</i>	Tasawaq	Tadaksahak	Koyra Chiini	Koyraboro Senni
1S	<i>aɣəy</i>	<i>ɣáy</i>	<i>aɣáy</i>	<i>ay</i>	<i>ay</i>
2S	<i>ni</i>	<i>ní</i>	<i>nín</i>	<i>ni</i>	<i>ni</i>
2S imperative	∅	∅	∅	∅	∅
3S independent	<i>ana</i>	<i>ńgà</i>	<i>áńga</i>	<i>ńga ~ ńa</i>	<i>ńga</i>
3S subject	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>
1P	<i>yayu</i>	<i>írì</i>	<i>áari</i>	<i>yer</i>	<i>ir</i>
2P	<i>ndzyu</i>	<i>índì</i>	<i>áandi</i>	<i>wor ~ war</i>	<i>war</i>
2P imperative	<i>wə-</i>	<i>wa</i>	<i>ba ~ wa</i>	<i>wo</i>	<i>wa ~ wo</i>
3P independent	<i>ini</i>	<i>ńgì</i>	<i>íńgi</i>	<i>ńgi-yo</i>	<i>ńgey ~ ńgii</i>
3P subject	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>

There is no question of borrowing here; but the organisation of this paradigm is another matter.

The greater degree of fusion this represents is obviously reminiscent of Arabic and Berber; but how similar are they in detail? In Arabic, Berber, and Songhay, bound pronominal markers generally differ in form from independent pronouns. In Arabic and

Berber, they also cannot be separated from their host (eg by an adverb); the same applies in Kwarandzyey, as well as Tadaksahak (Christiansen-Bolli 2010:74), eg:

2.8 *ini* *ɣar* *i-bab-nəqqəʃ* *lhərf*
they just **3P-PROG-subtract** letter
 They just subtract a letter.

2.9 *ayi* *küzzəɣdi* *ʕa-bə-zda*
I every day **1S-IMPF-walk**
 Me, I walk every day. (2007-12-22/11)

but not in southern Songhay languages, eg Koyra Chiini:

jaa *aljumaa han* *yer* *ta* *tumbutu* *boro si* *fari*
 since Friday day **1PIS** Top Timbuktu person ImpfNeg farm
 Since on Fridays we Timbuktu people don't do farm work (Heath 1999a:214)

Apart from separability, object markers (verbal or prepositional) behave similarly in all three: they are in complementary distribution with full NP objects, or at most are optional when the latter are present. Pronominal possessors in Arabic and Berber are normally in complementary distribution with NP possessors, but for a subset of family terms in Berber they are obligatory whether or not NP possessors are present (forms without an explicit pronominal possessor are interpreted as 1st person singular); no similar phenomenon appears in Kwarandzyey. Thus, for example, we get “Azzouz GEN father” not a calque *‘‘Azzouz 3S GEN father’’:

2.10 *lhaʒ* *ʕid*, *ʕazzuz* *n* *əbba*
 Hadj Laid Azzouz GEN father
 Hadj Laid, Azzouz' father (2008-02-05/17)

Differences are most conspicuous in subject agreement: there markers are obligatory in Arabic and Berber – as well as the heavily Berberised Songhay language Tadaksahak

(Christiansen-Bolli 2010:74) – whether or not a full NP subject is present, in all finite clauses, except for subject focus constructions in Berber. In southern Songhay, by contrast, pronominal markers are unnecessary, and normally absent, when a full NP is present:

maabe di moo koy ηgu wande di doo
 griot DEF also go 3Ref1Sg wife DEF chez
 The griot, for his part, went to his (own) wife... (Heath 1999a:436)

i-kul kaa bara A
 AbsolPl-all come except A
 They all came except A (name) (Heath 1999a:225)

aywa i-kul kaa
 well AbsolPl-all come
 Well, they all came (Heath 1999b:85)

In Tasawaq, likewise, redundant pronominal subject markers, though common, are not obligatory, being absent in examples such as:

áàrù ní-màý túnfã
 man NEG.PERF-have strength
 “the man has no strength / the man is weak” (Kossmann 2003)

Kwarandzyey turns out to occupy an intermediate position between the two types. For non-3rd person subject forms, the situation is clear-cut: just as in Berber, the subject agreement marker is obligatory:

2.11 *ayi ζ-ba ləmb^w=ka*
 1S 1S-EXIST garden=LOC
 (Whereas as for) me, I was in the garden. (2007-12-28/04)

except when the subject is in focus:

- 2.12 *ay=a mməy lkas=γu*
 1S=FOC own cup=DEM
 I'm the one that deserves this cup. (2007-12-22/12)

For 3rd person subject forms, on the other hand, the grammaticalisation of agreement has gone less far. Whether or not a redundant agreement form shows up in this case depends on at least two factors in addition to focus: subject specificity and auxiliary choice.

Non-specific subjects consistently are not followed by subject markers, as most easily illustrated by *bayu* “anyone” (other such non-specific indefinites are usually ambiguous, because *h(ay)a* “any” ends in *a*, and interrogative “who?” is normally in focus):

- 2.13 *tsəksi bay s-kə-ddzam-a*
 now anyoneNEG-anymore-do-3S
 Now no one does it any more. (2007-12-30/17)

- 2.14 *bay s-ba-bbəy gay i-ddər küll*
 anyoneNEG-PF-know hereabouts 3S-go all
 No one knows where they went at all. (2007-12-30/17)

The same applies to non-specific relative heads:

- 2.15 *ʕar uy ka-nna a-m-gʷa-ndz-a*
 just REL come-away 3S-IRR-remain-CAUS-3S
 Just whoever came away he would stop. (2007-12-22/11)

Before certain functional categories that may be labelled auxiliaries for convenience – in particular, the existential marker *ba*, and the verbal prefixes perfect *ba*, progressive *bab*, and future/desiderative *baʕam* – 3rd sg. *a-* is in complementary distribution with

full noun phrase subjects immediately preceding the verb. The former two look like verbs in some respects, but occur without aspect markers. The latter two lose their *b* when preceded by the 3rd person singular prefix. Thus:

Existential:

- 2.16 *ndza lhšiš bq=a.ka nə-m-dzuy-a*
 if grass EXIST=3S.LOC 2S-IRR-uproot-3S
 If there's grass (weeds) in it you uproot it. (2008-01-01)

vs.

- 2.17 *a-bq ssaffiyya*
 3S-EXIST Chafaïa
 It's at Chafaïa. (2007-12-06)

Perfect:

- 2.18 *əgga tsərfəs ba-ʕarṛəm*
 PAST truffle PF-plentiful
 Truffles were plentiful. (2007-12-06)

vs.

- 2.19 *əgga yə-b-gə amrər=ka skudzi=dzi, ə: a-a-ʕarṛəm*
 PAST 1P-IMPF-find erg=LOC wood=ANA, uh 3S-PF-plentiful
 We used to find that wood on the erg, it was plentiful. (2007-12-06)

Future:

- 2.20 *aywa amin baʕam-dri*
 well, Lameen FUT-go
 Well, Lameen is going to go. (2008-02-05)

vs.

- 2.21 *a-aʕam-ʔa tṭəyyara=ka*
 3S-FUT-go up plane=LOC
 He's going to go up in a plane. (2008-02-05)

In general they display the same behaviour in the 3rd person plural:

- 2.22 *ayinka ba funi, affu ba funi*
 two EXIST alone, one EXIST alone
 Two are on their own, one is on its own. (2008-01-19/08)

- 2.23 *lkisan ba fan mu=ka*
 cups.PL EXIST 1S.Gen front=LOC
 The cups are in front of me (2008-01-03/06)

- 2.24 *əgga izūnkʷaḍən ba-ḥarṛəm*
 PAST gazelles.PL PF-plentiful
 Gazelles used to be common. (2007-12-30/17)

However, younger speakers seem to prefer to use *i-* even with *ba*:

- 2.25 *an lhəybuš i-ba-yəḍḥəf i-s-sab-nnən huwwa*
 3SGen children 3P-PF-thin 3P-NEG-PROG-drink milk
 Her children were thin, they wouldn't drink milk. (2008-02-05/17)

- 2.26 *an tsiškawən i-ba-ddza ḥar tsagida*
 3S.Gen horn.PL 3P-PF-do like forked stick
 Its horns are shaped like a forked stick. (2008-02-05/17)

This difference is somewhat reminiscent of the situation in local Arabic: as etymological participles, existential *kayən* and future *bayi* do not take subject person agreement, and, although the presentational copula *ra-* usually used to translate *ba* does take obligatory agreement, the agreement markers it takes are those used for objects, not subjects. However, since all of these do take person agreement without an NP subject, the similarity is not compelling.

With other forms, however, the subject agreement marker normally appears whether or

not an NP subject is present, as long as the latter is specific (but irrespective of definiteness):

2.27 *madam* *atsa=dz* *a-s-kūm-yarah*
 as long as star=ANA 3S-NEG-yet-rise
 As long as that star has not yet set (2007-12-21/33)

2.28 *ndzūy bəyn a-b-ka*
 so that rain 3S-IMPF-hit
 so that rain would fall (2007-12-28)

2.29 *ləmsabiḥ* *a-b-ka* *məssəx*
 Orion's Belt 3S-IMPF-come thus
 Orion's Belt is shaped like this (lit. comes like this.) (2007-12-21/33)

2.30 *atsa rəbfa i-b-ka*
 star four 3P-IMPF-come
 Four stars come. (2007-12-21/33)

2.31 *ayinza i-b-kəy*
 three 3P-IMPF-stand
 The three stand. (2007-12-21/33)

2.32 *aɾ=fu* *a-kka*
 man=one 3S-come
 A man came. (2007-12-16/02)

Thus the innovation of redundant pronominal subject markers brings Kwarandzyey closer to the model of Berber and Arabic; but the conditioning factors restricting their use, though only relevant for a small minority of subjects and verbal “auxiliaries”, remains a rather significant difference from either of these languages. This is significant for understanding the nature of the change; rather than an abrupt calque on

Berber or Arabic, this seems to be a more gradual grammaticalisation process in which, under Berber or Arabic influence, pronominal subject markers have become obligatory for a larger subset of nouns. Redundant pronouns, notably clitic doubling, tend to be possible or obligatory for continuous sections, starting from the definite end, of the Definiteness Hierarchy (Croft 2003; Aissen 2003), given below with the portions for which pronominal subject markers are obligatory in each language marked (illustrating how much more similar Kwarandzyey is in this respect to Berber and Arabic than to southern Songhay):

Table 8.

<i>Most definite:</i>	Koyra Chiini	Kwarandzyey	Arabic, Berber, Tadakshak
Personal pronoun	√	√	√
Proper noun		√	√
Definite NP		√	√
Indefinite specific NP		√	√
Non-specific NP			√
<i>Least definite</i>			

Subject agreement in Kwarandzyey thus has a double function, marking both agreement and specificity; in the latter function, it fulfills the functions of a Stage II article, in the terminology of Greenberg (1978).

On some accounts, the development of rich subject agreement, as here, would be expected to have other consequences for the grammar:

1. “Null” subjects marked only by the agreement should become possible (Taraldsen 1980; via Newmeyer 2005:38), as in Arabic and Berber. Typological correlations aside, such a consequence follows naturally from the assumption that agreement markers like these derive from the reanalysis of existing subject-verb sequences, which as such initially involve filled subject positions anyway. In this data it applies when, and only when, the agreement marker is present on the verb: *a-zda* “s/he walked”, *a-aſam-zda* “s/he will walk” are acceptable sentences, but sentences like **zda*, **baſam-zda*, under that interpretation or even the non-specific indefinite interpretation “did/will anyone walk?”, are unattested.
2. Verbs should raise to a higher position (Rohrbacher 1999). This is not supported here (for discussion, see Conclusion).

Inanimate 3rd person plural NPs often take 3rd person singular agreement:

- 2.33 *iqəlman=dz=yu tsuyu i-b-ts=a.si?*
 lump.PL=ANA=PL what 3P-IMPF-say=3S.Dat?
 Those lumps, what do they call them (sg.)? (2007-12-06/AM)
- 2.34 *ini i-b-ts=a.s “lahruz”, yayu ya-b-ts=a.s əlhəz=yu*
 they 3P-IMPF-say=3S.Dat “lahruz”, we 1P-IMPF-say=3S.Dat amulet=PL
 They [Arabs] call them (sg.) “lahruz”, we call them (sg.) “amulets” (2008-01-19/07)
- 2.35 *ʕa-dḏəb-ndz=a.s zga=yu aɣ=a tətṭb-ana*
 1S-wear-CAUS=3S.Dat cloth=PL 1S=FOC sew-3SEmph
 I dressed it in clothes, I was the one who had sown them (sg.). (2008-01-30/10)
- 2.36 *šškayər=dz=yu, nə-b-lləxs-ana*
 bag.PL=ANA=PL, 2S-IMPF-wet-3SEmph
 Those bags, you wet them (sg.). (2008-02-05/17)

But this is not obligatory:

- 2.37 *a-yyər a-hnu-tə-ndza ddrəriž, a-rriḡl-ini*
 3S-return 3S-go out-hither-CAUS wheels, 3S-fix-3SEmph
 She's taken out the wheels again and fixed them. (2007-12-16/02)
- 2.38 *ʕa-nnən-ndz igəmm^wən=f=yu, əgg i-ba-qqūx*
 1S-drink-CAUS seedbed.PL=one=PL PAST 3P-PF-dry
 I watered some seedbeds, they had been dry. (2008-01-st)
- 2.39 *ləbbwarəd lūxxūdz yə-b-dri, yə-b-dri yə-b-fəz-i*
 wet garden.PL when 1P-IMPF-go, 1P-IMPF-go 1P-IMPF-dig-3P
 The wet gardens [gardens whose water table is naturally high so they don't need

irrigation], when we go to them, we go to dig them. (2007-12-30/17)

In Classical Arabic, inanimate plurals normally take 3rd person singular feminine agreement; particularly in Bedouin varieties of Maghrebi Arabic, this remains an option, and has been generalised even to many animate plurals (Marçais 1977:159). Is this phenomenon in Kwarandzyey to be related to contact with Arabic? While tempting on the face of it, that conclusion would be premature. In Koyra Chiini, a similar phenomenon sporadically appears in texts:

guusu woo yo i-i faani ga
 pit Dem Pl 3Pl-Impf dig **3Sg**

These big pits, they would dig them (Heath 1998a:110)

dofor woo yo? belle di yo ŋga o hīsa ga
 saddle Dem Pl Bella Def Pl SFoc Impf make **3Sg**

Those donkey-saddles? It's the Bellas who make it. (Heath 1998a:82)

The same seems to be attested in Koyraboro Senni:

aywa larb-ey w-ey ŋgey bir-aw-ey bara i še,
 well Touré-DefPl Dem-Pl 3PIF bow-DefPl only 3P Dat,

ŋga nda i ga nee...
3SgF with 3Pl Impf say...

Well, those Touré's, they had their bows. With that (=bows) they were thinking... (Heath 1998b:44)

While data from Songhay languages further south would be desirable, it appears likely that this is a pan-Songhay feature rather than a Kwarandzyey contact-related innovation.

2.2 Gender

2.2.1 Background

In both Arabic and Berber, nouns are lexically marked for gender, and pronouns, subject agreement marking (as seen above), and adjectives (see Adjectives) all agree with their referent in gender. In Classical Arabic, the masculine is unmarked while the commonest feminine marker is *-at-* (others include *-ā'*- and *-ā*); this has been reduced in the dialects to *-a*, with construct state *-it/ət*. Across Berber, the masculine marker is an initial vowel (sometimes dropped), while the feminine marker is an initial *tV-* usually combined with a final *-t*. In both languages, a small number of nouns, notably family terms, are not overtly marked for gender (eg Arabic *'umm-* “mother”, Kabyle Berber *yəlli* “daughter”)

For a minority of stems in both families, gender marking is also used derivationally. For such nouns, addition of the feminine markers discussed above may change an animate referent from male to female:

xāl- “maternal uncle” (m.) > *xāl-at-* (f.) “maternal aunt” – Classical Arabic

a-sli “groom” (m.) > *ta-sli-t* “bride” (f.) – Figuig Berber (Kossmann 1997:112)

or an inanimate referent from mass noun to count noun (see Numbers):

tamr- “dates (in general)” (m.) > *tamr-at-* “a date” (f.) – Classical Arabic

a-mlul “melons (in general)” (m.) > *ta-mlult* “a melon” (pl. *ti-mlal*) (f.) – Figuig Berber (*ibid*)

or, in Berber, from fruit name to tree name:

a-məšiši “fig” > *ta-məšiši-t* “fig tree” - Tumzabt (Kossmann 2008:55)

A minor derivational use of gender marking is to form the name of a language of a people from its ethnic name. In Berber and classical Arabic, this is done by adding

feminine marking; in Egyptian Arabic, by contrast, the masculine is generally used.

In Berber, gender marking can also be used to indicate size, masculine > feminine indicating a diminutive, and feminine > masculine an augmentative:

a-nšuš “lip” (m.) - *ta-nšuš-š* “small lip” (f.) – Figuig Berber (*ibid*)

t-mar-t “beard” (f.) > *mar* “huge beard” (m.) – Figuig Berber (*ibid*)

ilés (lingua) “tongue” (m.) > *t-iles-t* (linguetta) “little tongue” (f.) – Nafusi (Beguinot 1931:32)

In Songhay, by contrast, there is no grammatical gender. The derivational functions handled by gender in Arabic and Berber are handled in southern Songhay, if at all, through compounding or syntactically. Thus natural gender of humans or animals may be expressed by adding *aru* / *har* “male”, *woy* “female”:

ize “child” > *iza-aru* “boy, son”, *iza-woy* “girl, daughter” – Koyraboro Senni (Heath 1999b)

The name of a plant may be formed from that of its fruit by adding *ñaa* “mother”, and that of its seeds, or more generally grains, by adding *ize* “child”:

dunguri “beans” > *dunguri-ñaa* “bean plant”, *dunguri-ije* “seed (of bean)” – Koyra Chiini (Heath 1999a:78)

Diminutives are also sporadically formed by adding “child”:

fufu-tondi “grinding stones” > *fufu-tondi-ije* “small grinding stone” – Koyra Chiini (*ibid*)

2.2.2 Siwi

As the above description may have suggested, the differences between gender marking morphology in Berber and Arabic are small enough that contact effects are not particularly conspicuous; however, a few are discernible. In particular, Arabic loans have added significant morphological irregularity to a formerly rather consistent gender marking system.

In Berber, as seen above, the circumfix *t-...(-t)* is found on almost all feminines, with rare exceptions, mainly kinship terms referring to females. Some Arabic loans have been fully integrated into the inherited Berber feminine marking system, eg:

tīmadrəst “school” (< Ar. *madrās-at-*)

tmaṣərt “oil press” (< Ar. *maṣṣar-at-*)

tḥufɾət “hole (in earth)” (< Ar. *ḥufr-at-*)

tīmərəkəbt “boat” (< Eg. Ar. *markib-* m./f. < Cl. Ar. *markab-*)

The oldest attestation of a feminine singular borrowing into Siwi from Arabic, <*Tschaschet*> (*tšašət*) “cap” in the very short wordlist of Hornemann (1802), falls into this category.

However, many words have remained closer to their Arabic form. Most commonly, they keep the initial Arabic article (without any definite sense) while taking a final feminine marker *-t/-ət*:

əlqəbɪlt “tribe” (< Ar. *al-qabīl-at-*) (N1p215)

əlɣelt “family” (< Ar. *al-ḡā'il-at-*) (N1p215)

əlɣəttət “silver” (< Ar. *al-ḡidd-at-*) (N1p215)

əljmət “Friday” (< Ar. *al-jumu'at-*) (N1p218)

Examples of this can already be found in Caillaud (1826), eg <*El-Fatéte*> (*əlɣəttət*) “silver”. The final *-t/ət* could be interpreted either as the Arabic construct state or as a Berber feminine marker; but, since in dialectal Arabic the construct state is incompatible

with the definite article, it is probably better considered as the substitution of a Berber feminine suffix for the Arabic one. An alternative analysis would take this strategy to have been first established through learned or very early borrowings from Classical Arabic, where the suffix *-at-* is in principle pronounced sentence-medially whether or not the noun is in the construct state. In other Berber varieties the form *-ət* (with a schwa) is not normally attested on native words, but in Siwi the shortening of *i* yields it regularly in a minority of native words, eg *tinifət* “lentil”. This strategy for adopting feminine Arabic nouns is in any case rather widespread in Berber, found for example in Figui (Kossmann 1997) and Kabyle (Dallet 1982).

At least one masculine Arabic noun with a final *-t* gets assigned to the feminine: from Cl. Ar. *waqt-* “time”:

- 2.40 *lwəqt tū-ta,* *ənnhar* *yə-ṭwil-a*
 time **MOD-this.F** day 3M-long-PF
 At this time, the day is long. (2009-06-19)

This is not, however, a general rule; contrast, for example, from Cl. Ar. *sabt-* “Saturday”:

- 2.41 *g-ús-ax* *g* *əssəbt* *wən* *g-úsəd*
 IRR-come-1S on Saturday **REL.M** IRR-3M.come
 I will come next Saturday (2009-06-23)

Cases like these make a final *-t* a less reliable indicator of gender than it would have been in pre-contact Siwi.

In some probably more recent loans, even the substitution of final *-t* for Arabic *-a* does not occur:

- ḥarbiyya* “car” (< Eg. Ar. *ḥarabiyy-a*)
alkosa “courgette” (< Eg. Ar. *il-kōs-a*)

larḡa “termite” (< Ar. *al-'ard-at-*) (N1p250)

məfruka sweetbread sp. (< Ar. *ma-frūk-at-*, lit. “rubbed (f.)”) (N1p215)

This too is already attested in Caillaud (1826), who gives <*Kawä*> for “coffee” (modern *alqahwa*). As a result, final *-a*, formerly with no close connection to gender and still found on some masculine singulars (eg *aləfsa* “non-venomous snake”, *alədda* “drool”), becomes a rather reliable indicator of feminine gender for singulars without a Berber nominal prefix, eg:

2.42 *lqáhwa* *tə-qqád*

coffee 3F-burn

The coffee is hot. (2009-06-23)

Interestingly, a fourth logical possibility – a Berber feminine prefix with an Arabic singular *-a* rather than a Berber feminine suffix – is not attested for Arabic borrowings. No case has been observed where *-a* is suffixed to a noun of Berber origin.

As noted by Vycichl (2005:211), certain Arabic loans are grammatically feminine despite having no feminine morphology and no natural gender. (No example of the opposite phenomenon, grammatically masculine nouns with feminine morphology, has been noted.) Thus “road”, “cart”:

2.43 *tə-ddúwwál* *sg* *əlməsráb* *tán* *t-usíd-a* *səgd-əs*

3F-return.INT from road **REL.F**3F-come-PF from-3S

She was returning by the road by which she had come. (2009-06-21)

2.44 *ddərb n* *məssus* *ta-ṭwəl-t*

road GEN Messous **FSg-long-FSg**

The Messous road is long. (2009-06-23)

2.45 *əlkárru tátok* *zr-áx-tət* *g əssəkkət n məssus*

cart **DEM.F.2:M** see-1Sg-**3FObj** in road GEN Messous

That cart, I saw it on the Messous road. (2009-06-23)

At least for “road”, the form-gender mismatch is probably motivated by retention of the gender of the word replaced by the borrowing, rather than by the gender of the borrowing itself. In Classical, Egyptian, and Eastern Libyan Arabic (Hinds & Badawi 1986, Benkato pc) both *masrab-* and *darb-* are masculine, although another word for road, *ṭarīq-*, can take either gender in Classical or Egyptian and is feminine in Bedouin Arabic (Panetta 1943:57). The eastern Berber word for “road” that the first two borrowings would have replaced, on the other hand, was most probably feminine, like Awjila *tebārūt* “strada, via”, El-Fogaha *tabārūt / tabārūkt* “strada”. *alkarṛu* “cart” is ultimately from Italian *carro*, which is masculine, via Bedouin Arabic, where it is also masculine (Panetta 1943:82; also Benkato, p.c.); there is no information available on equivalents in other eastern Berber languages, and I have not found an inherited word for “cart” in dictionaries of other Berber languages such as Tuzabt, Ouargli, and Tamasheq of Burkina Faso, but assuming that the gender was inherited from some term (perhaps generic) with a similar meaning and a feminine gender (like Eg. Ar. *ṣarabiyya*) would provide the neatest explanation.

The derivational use of the feminine in Siwi differs in some respects from both Arabic and most Berber. The addition of feminine marking to indicate natural gender remains, eg *funas* “bull” vs. *t-funas-t* “cow”, *a-kubb^wi* “boy” vs. *ta-kubb^w-ət* “young bride”. The use of the feminine to form count nouns from mass nouns is less prevalent than in many Berber varieties, being mainly restricted to Arabic loanwords; for discussion, see Numerals. Siwi has retained the widespread Berber method (Kossmann 2008:55) of productively forming tree names (feminine) from the names of their products (masculine) through circumfixation of *t(a)-...-t* with gender change:

Table 9.

	fruit	tree	
lote	<i>ənnbaq</i>	<i>t-ənnbaq-t</i>	
pomegranate	<i>a-rmun</i>	<i>ta-rmun-t</i>	
olive	<i>a-zəmmur</i>	<i>ta-zəmmur-t</i>	
fig	<i>a-mūčči</i>	<i>ta-mūččə-t</i>	(2009-06-25)

The diminutive use of the feminine (and augmentative use of the masculine) is unproductive in Siwi; however, sporadic traces remain in words such as:

<i>aqərruš</i>	basket sp. (larger)
<i>taqərrušt</i>	basket sp. (smaller)
<i>aşrum</i>	piece of guts
<i>taşrumt</i>	smaller/less prepared piece of guts (2009-06-23)

Could the loss of the diminutive by feminisation in Siwi be a calque from Arabic? The diminutive is no longer productive in Cairene Arabic, but that dialect's influence on Siwi appears too recent to account for the loss. In Cyrenaican Arabic (Owens 1984:75) and Bahariya Arabic (Drop & Woidich 2007), as in Classical, it is formed primarily by internal templatic modification (roughly speaking, infixation of *-ay-/-ē-* with associated vowel modification). The productivity of this category might be expected to reinforce it in Siwi rather than weaken it. On the other hand, the fact that diminutive formation is not a systematic function of feminine marking in Arabic might motivate removing it from the functions of feminine marking in Siwi. (The Arabic diminutive is sometimes accompanied by affixation of the feminine ending, but this merely makes feminine marking explicit on diminutives formed from feminine nouns without marking, eg Cyrenaican *baṭun* “stomach” (f.) > *ubṭēn-a.*) It is not clear that this change can be taken as the result of contact, rather than, say, system-internal simplification (perhaps encouraged by second language acquisition of Siwi, or by change in discourse expectations), or just drift.

In Siwi, unlike most Berber languages and unlike Classical Arabic, language names (including *siwi* “Siwi”) are masculine, even though *žlan* “speech, language, situation” is grammatically plural:

2.46	<i>jir</i>	<i>n</i>	<i>šámmi</i>	<i>yə-ssáwal</i>	<i>šárbi</i>	<i>d</i>	<i>ənglizi</i>	<i>d</i>	<i>fɾənsáwi</i>
	child	GEN	pt. uncle	3M-speak.INT	Arabic and English				and French

My cousin speaks Arabic and English and French. (2009-06-23)

This clearly represents influence from regional Arabic: in both Egyptian and Eastern Libyan Arabic, language names are consistently masculine. This applies all the more since all attested language names in Siwi are themselves Arabic borrowings (or borrowings via Arabic.)

2.2.3 Kwarandzyey

Kwarandzyey, like all Songhay languages, has no gender system – nothing takes agreement based on a noun's gender. However, it has borrowed Arabic and Berber nouns in such great numbers that the Arabic and Berber feminine affixes have become a reliable indicator of natural gender on nouns referring to animate higher beings, and the Berber ones have attained some limited productivity even with Songhay stems; in short, derivational gender morphology has been borrowed, while inflectional remains unproductive and serves no function within the system.

Sex is explicitly marked in Kwarandzyey on many (but not all) nouns referring to humans, monsters (genies, ogres, etc.), domestic animals, and palm trees, eg:

Table 10.

<i>sənnu</i> “master/'white' man”	vs.	<i>nana</i> “mistress/'white' woman”
<i>ag^wəd</i> “(male) jinn”	vs.	<i>tsag^wəɗts</i> “female jinn”
<i>amkkən</i> “billy-goat”	vs.	<i>tsəksi</i> “nanny-goat”
<i>itsum</i> “male palm tree”	vs.	<i>kungu</i> “female palm tree”

A couple of wild bird species' sexes are also distinguished by words primarily referring to social class, eg:

<i>iskərman lhəɾɾ</i> “ <i>Lanius senator?</i> m.”	vs.	<i>iskərman ahəɾɾən</i> “ <i>L. senator?</i> f.”
(bird sp. free)		(bird sp. hartani/serf)
(N6p120, identified through illustrations)		

but these distinctions are conceived of as relating to the colour of the bird, and I did not find any speaker who was aware that the two differ in sex.

Most such gender pairs are suppletive, eg *sənnu/nana* above, or *ʕammi/xari* “paternal/maternal uncle” vs. *lalla* “aunt”. The sex of such a noun's referent can not in general be guessed from its form. However, Berber borrowings are so common, and so distinctive in shape, that the Berber gender affixes *a-/i-* for males and *tsa-...(-ts)/tsi-...-(ts)* have become rather reliable indicators of the referent's sex for nouns referring to humans or domestic animals, eg:

<i>izzəd</i> “rooster”	<i>tsarəmts</i> “she-camel”
<i>amkkən</i> “he-goat”	<i>tsarug^{wəd}</i> “maiden nanny-goat”
<i>afəg^wrəs</i> “unmarried young man”	<i>tsang^{wəd}</i> “unmarried young woman”
<i>aɾu</i> “man” (< Songhay)	<i>tsifqirən</i> “old women who meet to sing <i>madih</i> ”
<i>isri</i> “groom”	<i>tsaməməš</i> “bride”

This does not always hold even for domestic animals: for example, *išni* “sheep/goat” is masculine in form but generic in meaning (and by default feminine in reference), and *tsafəlləs* “chick” (Ifrenyu) feminine in form but generic in meaning (the sex of a chick is notoriously hard to determine.) It does not hold at all for wild animals; for example, *asiyyəd* “ostrich” or *aɣərza* “rodent” have “masculine” forms, and *tsirəw* “bird” (< Songhay) or *tsigrəz* “beetle” have “feminine” ones, but in fact all of these refer to animals of either gender.

The inherited Songhay method of forming feminines by adding *-wəy* “woman” is retained for only two words: *izi* “boy” (KS *ize*) > *izwəy* “girl”, *tsa* “brother” (KS *čere* “friend”) > *tsawəy* “sister”. However, the enormous influx of Berber words has led to a number of derivational pairs in which the feminine is formed by adding *ts-...-ts* to a masculine noun starting with *a-* or *i-*:

Table 11.

- aḍabbər* “male in-law” > *tsaḍabbərts* “female in-law” (Zenaga *aḍabbäy*, f. *taḍabbäl*)
- ažər* “male neighbour” > *tsažərts* “female neighbour” (N1p258) (<< Ar. *jār-*)
- aḥəzzi* “widower/divorcé” > *tsaḥəzzits* “widow/divorcée” (N6p33) (N Tam. *aḥəzri*, f. *taḥəzrit* “bachelor” < Ar.)
- aḥəṛṭən* “*hartani* man” > *tsaḥəṛṭənt* “*hartania* woman” (N1p201) (Zenaga *aḥəṛḍan*, f. *tahaṛḍant*; also in Arabic)
- afrəx* “bastard (m.)” > *tsafrəxts* “bastard (f.)” (N9p121) (N Tam. *afrux* “petit d'un animal”, f. *tafruxt* < Ar.)
- abəṛṛən* “stranger (man)” > *tsabəṛṛənts* “stranger woman” (N1p201) (N Tam. *abəṛṛani* < Ar.)
- aməməḍ* “marabout (man)” > *tsaməməḍts* (Ifr.) “marabout woman” (N Tam. *amrabḍ*, f. *tamrabəṭṭ*)
- ag^wəḍ* “(male) jinn” > *tsag^wəḍts* (N6p) “female jinn” (Zenaga *ugruḍan* pl.)
- ižumə* “ram” > *tsižuməts* “ewe” (cp. N Tam. *izimmər*, f. *tizimmərt*)
- ayyər* “he-donkey” > *tsayyərts* “she-donkey” (N6p56) (Tetserrét *aḥyil*, Zenaga *aʔž(ž)iy*, f. *taʔž(ž)əl*)

This is not restricted to etymologically Berber words, but appears even in words of known Songhay origin, indicating some degree of productivity at least historically:

- aməzzinu^w* “old man” > *tsaməzzinu^w(ts)* “old woman” (from Berber *aməyar* “old man” plus Songhay *zzin-uw* “old”, cp. KC *jeen-o*, KS *zeen-a*; now largely replaced by *bbahḥini*, *yəmmaḥəḥna*, lit. “grandfather”, “grandmother”)
- aḥəṇḍu* “blind man” > *tsaḥəṇḍuts* “blind woman” (both from *aḥəṇḍu* “blind (adj.)”; cp. Tasawaq *fəndó* (Kossmann 2003:np)) (N7p121)
- fumbu* “stinky, smelly” > *tsafumbu^{yts}* “stinky woman” (N7p) (Songhay, cp. KC *fumb-o*)

The use of gender affixes to mark countability (see Number) and size has not been adopted. The closest semantic equivalent of a diminutive is formed syntactically with

the adjective *kədda* “small”, eg *aḍṛa kədda* “small mountain = hill”, *gungʷa kədda* “small chicken = chick”; for countability, see Numerals.

Berber feminines, as exemplified above, are simply borrowed as they are; the occasional lack of final *-t* in comparison to Northern cognates often reflects a source in Western Berber. Arabic feminines are typically borrowed with the definite article and with final *-a* becoming *-əts*, eg:

<i>zzlafəts</i>	plate (< M. Ar. <i>zlaf-a</i> < Cl. Ar. <i>zalaf-at-</i> ; cp. N Tam. <i>tazlafɨ</i>)
<i>ləqbiləts</i>	tribe (< <i>qbil-a</i> < <i>qabīl-at-</i> ; cp. N Tam. <i>taqbilt</i>)
<i>zzmaʕəts</i>	group (< <i>jmaʕ-a</i> < <i>jamāʕ-at-</i> ; cp. N Tam. <i>džmaʕt</i>)
<i>zzihəts</i>	direction, region (< <i>jih-a</i> < <i>jih-at-</i> ; cp. N Tam. <i>lžiht</i>)
<i>rɾayəts</i>	flag (< <i>ray-a</i> < <i>rāy-at-</i> ; cp. N Tam. <i>rɾaya</i>)
<i>ssəḍṛəts</i>	plant (< <i>səḍṛ-a</i> < <i>šajar-at-</i> ; cp. N Tam. <i>əššərt</i>)
<i>lhəts</i>	alley, street in traditional town (< <i>ħar-a</i> < <i>ħār-at-</i> “neighbourhood”)
<i>lbuyəts</i>	pit-cooking by embers buried in hot sand (< <i>buy-a</i>)
<i>lfəlkəts</i>	coccyx (Hass. <i>fəlk-a</i> “vertebra” < Cl. Ar. <i>falk-at-</i>)

This is a widespread strategy for the adoption of Arabic loans in Berber, as discussed above for Siwi, and many, perhaps even all, of these loans may have entered the language via Berber. *lhəts* is attested with plural *yu* in Cancel (1908:335) <*lehathio*>, and *ləqbiləts* (*ibid*:339) as <*el qebilets*, *el qebila*>, confirming that these include pre-colonial borrowings. While the Northern Tamazight forms from Taifi (1991) often clearly cannot have been the direct source, it is striking that so many of these forms have also been borrowed into Northern Tamazight; no good Southern Tamazight dictionary to compare exists, but I suspect the correspondence would be even better there. However, some speakers (who knew no Berber) displayed a metalinguistic awareness of this strategy, regarding it as the “right” way to turn Arabic words into Kwarandzyey, so the Berber intermediary may no longer be synchronically relevant to speakers' understanding of this correspondence rule.

Often, however, the *-a* remains *-a*:

<i>əlbəladīyya</i>	town hall (< MSA <i>baladiyy-at-</i>)
<i>ṭṭabla</i>	table (< M. Ar. <i>ṭabl-a</i> < Fr. <i>table</i> ; cp. N Tam. <i>ṭṭabla</i>)
<i>ššūmbra</i>	room (< <i>šūmbra-a</i> < Fr. <i>chambre</i>)
<i>əlmərmiṭa</i>	(modern) pot (< <i>mərmiṭ-a</i> < Fr. <i>marmite</i>)
<i>lqərʕa</i>	bottle (< <i>qərʕa</i> < <i>qarʕ-at-</i> ; cp. N Tam. <i>talqərʕatt</i>)
<i>ṭṛəyya</i>	the Pleiades constellation (< <i>ṭṛəyy-a</i> < <i>θurayy-ā</i>)
<i>ləbtsəyma</i>	plant sp. (<i>Hyoscyamus falezlez</i>) (< <i>bθəym-a</i> (heard by me at

Abadla, also in Taine-Cheikh (1988) for Hassaniya)

mm^wəlbəyna plant sp. (*Euphorbia* sp. - *guyoniana*?) (*mm^w əl-lbəyna*, lit. “mother of buttermilk-DIMIN”, in Prémare (1993), Heath (2004))

This seems to be particularly common in more recent loans that probably entered directly from Arabic; thus “table”, “room”, “pot” are French loans into Arabic and thus probably post-1830, “town hall” is a post-1962 political concept, and “bottle” is a product which has never been manufactured in the oasis, while wild plant names and astronomical terms relate to herding and desert travel, traditionally Bedouin specialties. It can be regarded as the default for new loans. However, it was already present, at least as a variant, in 1908: as well as “tribe” above, Cancel gives <*el r'aba*> (334)/<*r'abets*> (346) “oasis” (*lyabəts* < *γab-a* < *γāb-at-*), <*el hadjala*> (339) “widow” (not recorded by me as Kwarandzyey; local Arabic *həjjala* (N6p33.))

Unlike *ṭsa-...-ts*, neither *-a* nor *-əts* are attested as suffixes to words of Berber/Songhay origin, suggesting that they are not productive. No native Songhay words end in *-əts*, nor start in *əl-* or a morphologically simplex geminate, so words of the form *əl-...-əts* or *əl-...-a* referring to humans or domestic animals should refer to females about as predictably as in Arabic – but, as the list above suggests, such words are in practice fairly uncommon.

In one instance, the feminine ending has disappeared, due probably to historic voicing assimilation (**dt* > **dd* > *d*, since gemination is non-contrastive word-finally):

laḥmad hamada, open desert (< *ḥmad-a*). Cancel (1908:346): <el hamed'>

Language names are often borrowed from Arabic in modern Kwarandzyey, including the feminine ending, eg:

2.47 *wə, ana ndza lṣarbiyya.*

yeah, 3S with Arabic

Yes, it's in Arabic. (2008-01-19/04)

2.48 *ndza lbəlbaliyya nə-m-ts=a.s nən kəmb ininka*

with Belbali 2S-IRR-say=3S.Dat 2S.Gen hand both

In Kwarandzyey you'd call it “both your hands” (2008-02-05/10)

However, the corresponding etymologically masculine ethnic adjective is not usually in common use (for example, *bəlbala-kʷəy* is preferred to *bəlbali* for “a Belbali person”), so it is unlikely that these can be regarded synchronically as derivational. Traditionally language names were formed as compounds ending in *dzyəy* “speech”, eg *yabən-dzyəy* “Arabic”, but the only such compound still in everyday use is *kʷarə n dzyəy* “Kwarandzyey = speech of Kwara/town”.

2.3 Number

To a much greater extent than gender, number is a semantic property of the noun phrase's referent, rather than a lexical property of the noun phrase's head – an early system morpheme, in Myers-Scotton's (2002) 4-M model terminology, ie one determined by the properties of the referent rather than by how the phrase is put together. Nonetheless, in many languages at least some nouns are marked lexically for number in a manner not predictable from their semantics alone; thus, for example, in English *underwear* is singular and *boxer shorts* plural, even when being used to refer to precisely the same item, and in Arabic or Kwarandzyey collectives such as “locusts” (*jarād-, tsumə*) take singular agreement with plural reference.

Arabic, Berber, and Songhay all display number agreement between noun phrases and items referring back to them, notably pronouns and verbal agreement markers, as seen above:

Classical Arabic:

aṭ-tifl-u 'akal-**a**-hu vs. *al-'aṭfāl-u* 'akal-**ū**-hu
 the-child-NOM ate-Pf3MSg-3MSgO the-children-NOM ate-Pf3MPI-3MSgO
 The child ate it. vs. The children ate it.

Figuig Berber:

lla-n *di-s* *i-mušan...* vs. *t-əlla* *t-šariš-t* *ta-məqqran-t...*
 be-3MPI in-3S MPI-place.PL 3FSg-be FSg-reservoir-FSg FSg-big-FSg
 There are places in it... There is a big reservoir... (Kossmann 1997:385-6)

Koyra Chiini:

surgu di **yo** *saa* *di* *kaa* *na* **i** *šinti...*
 Tuareg DEF PL time DEF REL Ø 3P begin...
 The Tuaregs, when they began... (Heath 1999a:434)

vs. **maabe** *di* *koy* **a** *har* *ga* *aamadu* *se*
 griot DEF go 3S say 3SObj Aamadou DAT
 The griot went and told it to Amadou. (Heath 1998a:439)

In Classical Arabic, number agreement depends on animacy – animates take plural agreement with gender determined by the head, inanimates take feminine singular agreement irrespective of the head noun's gender in the singular. It also depends on word order – when the verb precedes the subject, it agrees in gender and person but not number. In modern Arabic colloquials the system is rather more fluid, with the choice between plural vs. feminine singular agreement for plurals depending on different factors in different varieties.

Arabic and Berber also display number agreement within the noun phrase – like gender, number is marked on the head noun and on items agreeing with it, including adjectives, demonstratives, and relative pronouns, eg:

<i>'ulā'ika</i>	<i>l-'atfāl-u</i>	<i>ṣ-ṣiyār-u</i>	<i>'akal-ū-hu</i>
those.MPI	the-children-NOM	the-small.MPI-NOM	ate.PF-MPI-MSgObj

Those small children ate it. (Classical Arabic)

None of these items' plurals are necessarily predictable from the singular; in other words, plural forms are part of the lexicon.

In Berber, words referring to liquids (water, blood, ...) and to items consisting of two identical components (trousers, scissors, ... – as in English) are often plural in form and take plural agreement. In Arabic, they are normally singular.

In southern Songhay, nouns and adjectives have no lexical plurals. In all varieties, the plural is marked by a clitic suffix which is attached not necessarily to the head noun but to the last word of some subset of the noun phrase – usually N+Adj, but in Koyra Chiini N+Adj+Dem. In most varieties, it is also marked separately on the demonstrative.

2.3.1 Siwi

2.3.1.1 Semantics

The semantics of plural marking do not differ much between Arabic and Berber, leaving little room for Siwi to display semantic influence. However, Arabic borrowings referring to liquids or paired items have often retained their original number, making number less predictable for these sets. Thus while inherited liquids (eg *aman* “water”, *idammən* “blood”, *iṣəršen* “urine”, *tisukaf* “saliva”) are usually plural, eg:

2.49 *áman g-i-dárs-ən*
water IRR-3-scarce-PL

Water will be scarce. (2009-10-13)

- 2.50 *idammən-ənsən* *i-tənhərq-ən!*
 blood-3SGen 3-burn.INT-3PL
 Their blood gets hot! (when they watch sports) (N3p5)

borrowed ones are typically singular:

- 2.51 *lqáhwa* *tə-qqəd*
 coffee 3F-burn
 The coffee is hot. (2009-06-23)

- 2.52 *ššáy* *ħamí*
 tea warm.M
 The tea is warm. (2009-06-23)

Some bipartite items are inherently plural, eg:

- 2.53 *úš-i* *timiṭáz* *yə-čč-ín-a*
 give-1SDat scissors 3-eat-PL-PF
 Give me sharp scissors. (2009-06-25)

This is not in general applied to Arabic borrowings:

<i>Table 12.</i>	sg	pl	
tweezers	<i>əlmǔgbaš</i>	<i>ləm^wgabiš</i>	(N3p117)
pliers	<i>takəmmašət</i>	<i>tikəmmašiyyen</i>	(N3p117)
pliers	<i>əlkəllab</i>	<i>əlkəllabat</i>	(2009-06-23)

lkəllab *dá-w-ok* *ləšfər*
 pliers MOD-that.M-2:M yellow.M
 That pair of pliers is yellow. (2009-06-23)

- 2.54 *lkəlláb-at da-wíyy-ok lšəft-ən*
 pliers-PL MOD-that.Pl-2:M yellow-PL
 Those pliers (pl) are yellow. (2009-06-23)

But in at least one loanword, by no means recent (cp. Minutoli (1827:357): اسراويلن <'sr'wyln>), it has been:

- 2.55 *ssrawilən-nnəs t̥wíl-ən*
 trousers-3SgGen long-PL
 His trousers are long (2009-06-23); cp. Eg. Ar. *sirwāl*, pl. *sarawīl* (Hinds & Badawi 1986)

- 2.56 *srawlən əgzal-ən*
 trousers short-PL
 short trousers (N2p143)

- 2.57 *tə-lsa ssrawilən*
 3FS-wear trousers
 She wore trousers (N1p154)

Classical Arabic allows the use of *sarāwīl-* as a singular, perhaps explaining why a Berber plural marker was felt to be necessary; but in no relevant dialect of Arabic is “trousers” grammatically plural in reference to a single pair of trousers. This must represent the influence of a Berber model.

In Berber, grains have a certain tendency also to be plurals, unlike Arabic; thus in Siwi, “barley”:

- 2.58 *tumzen ħlu-t-ən*
 barley sweet-EP-PL
 “tasty barley” (2009-11-11)

No Arabic loans with unambiguously appropriate reference were found. However, *yardən* “wheat” was found to show masculine singular agreement:

2.59	<i>yardən</i>	<i>n</i>	<i>a-kwayyəs</i>
	wheat	GEN	M-good
	good wheat (2009-11-11)		

Cognates are plural throughout Berber; cp. Kabyle *irəd* (sg. rare, poetic = “grain of wheat”) > *irdən*, Taznatit *ihəd* “wheat plant” > *ihdən* “wheat”. Its change to the singular could plausibly be related to Arabic influence.

2.3.1.2 Morphology

Morphological influence is more conspicuous. The core system has been retained: nouns of Berber origin in general take Berber plurals, with unproblematic cognates elsewhere in the family. The Berber plural system is fairly complicated, and has already been described for Siwi by Vycichl (2005:200ff) and Laoust (1931:84ff); however, a brief comparative excursus is necessary to confirm its adherence to Berber norms. For Tuareg, Prasse (1974:50ff), by postulating vanished former **h*'s in a number of contexts to explain certain vocalic irregularities, reduces the system to eleven plural classes; for convenience of comparison, I will use his classification, excluding his Plurals 8 and 10 (restricted to a total of three nouns in Tuareg, with no counterparts in northern Berber), and 11 (prefixation of the plural word *id* – found at least sporadically in every major branch of Berber, but with no Siwi counterpart). Comparisons are drawn from Dallet (1982) for Kabyle, Boudot-Lamotte (1964) for Taznatit, Paradisi (1960) for Awjila, Paradisi (1963) for El-Fogaha, Kossmann (1997) for Figuig, Beguinot (1931) for Nafusi; bracketed numbers indicate the plural type taken by a cognate, where different from that of the Siwi form.

Table 13.

Plural 1 (affixal, “external”): *i-...-ən* m. / *t(i)-...-en* f. (with *i-* > *ə-* / *_CC*, here and throughout). The normal plural pattern for adjectives. In some cases a vowel reduced

to *a* in the last syllable of the singular reappears in the plural.

- asen* > *isenən* “tooth” (N1p70) (Awjila *asîn* > *sînen*, El-Fogaha *isîn* > *isînen*, Nafusi *sîn* > *isînen*)
akərčun > *ikərčunən* “donkey foal” (N2p19) (Taznatit *akriššun* > *ikrəššan* (2))
aḍyaγ > *ḍyaγən* “rock” (N2p71) (Kabyle *aḍyaγ* > *idyaγən*)
armun > *rmunən* “pomegranate” (N1p74) (Nafusi *armûn* coll.)
tarmunt > *tərmunen* “pomegranate tree” (N1p74) (Nafusi *tarmûnt* > *termûnîn*)
tamdəmt > *timədmən* “toe” (N1p68; also *timdam* (3), N3p102) (? Figuig *tifdənt* > *tifədnin*)
tasəmmətt > *tisəmmiten* “rope” (N2p77) (El-Fogaha *tsemmît* > *tsemmītîn*)
tarjət > *tirjen* “ember” (N2p73) (Kabyle *tirgətt* > *tirgin*)
tfunast > *tfunasen* “cow” (N1p159) (Kabyle *tafunast* > *tifunasin*)

Plural 2: m. *i-...aC*, f. *ti-...aC* (with no suffix, ablaut of last vowel to *a*.) The rarity of this plural in Siwi compared to other Berber languages is striking; it is commoner with feminine nouns than with masculine ones.

- abəršit* > *ibəršat* “child's canine tooth” (N3p46)
atərkū > *itərka* “rope to tie donkey” (N2p259)
tayməst > *təymas* “molar” (N1p70) (Figuig *tiyməss* > *tiymas*)
tasərt > *tisar* “hand-mill” (N2p106) (Figuig *tasirt* > *tisar*)
tarkast > *tirkas* “shoe” (N1p101) (Figuig *tarkass* > *tirkasin* (1))
turart > *turar* “hill” (N1p122) (Kabyle *tawrirt* > *tiwririn* (1) / *tiwrarin* (4))
tiyarzəzt > *tiyarzaz* “hare” (N1p158) (Figuig *tayərzišš* > *tiyarzaz*)

Plural 3: *i-...-an* m. / *ti-...-en* f., with vowel deletion except in (V)CVC roots, where *a* > *u* and *i* is preserved.

- ajmej* > *ijəmjan* “slave” (N2p148) (Figuig *išməž* > *išəmžan*)
ayram > *iyərm^wan* “date stone” (N2p210) (El-Fogaha pl. *igórman*, sg. unattested)
ifəf > *iffan* “breast” (N1p67) (Figuig *iff* > *iffan*)
iləs > *ilsan* “tongue” (N1p70) (Kabyle *iləs* > *ilsan*)
awəs > *iwsan* “sword” (N1p156) (Awjila *awiš* > *wiššen* (1))
aštīt > *išəttan* “bird” (N1p79) (Figuig *aždīd* > *iždīdən* (1), El-Fogaha *žadīd* > *iždād* (2))
ṭad > *iṭudan* “finger” (N1p69) (Figuig *ḍad* > *iḍudan*)
iziṭ > *iziṭan* “donkey” (N1p159) (Awjila *aziṭ* > *ziṭân*)
tašrūmt > *tišərm^wen* “intestines” (N1p70) (Awjila *tšerîmt* > *tšermîn*)

Plural 4: *i-...-ən*, with vowel shortening (elsewhere in Berber, substitution of *-a-* > *-i-* in Awjila) and doubling of the final consonant. Uncommon, and not so far attested with feminines.

- fud* > *ifūddən* “knee” (N1p67) (Figuig *fud* > *ifaddən*, Awjila *afūd* > *fiddən*)
fus > *ifəssən* “hand” (Figuig *fus* > *ifassən*, Awjila *afūs* > *fīssen*)

Plural 5: *i*-...-*awən* m. / *t(i)*-...-*awen* f. Typically, this is added to an already vowel-final word, whose last vowel is overwritten.

akbər > *ikəbrawən* “robe” (N2p58) (Awjila *tekābert* > *tekābrîn* “shirt”)
aməṭṭa > *iməṭṭawən* “tear (eye)” (N1p71) (Figuig *aməṭṭaw* > *iməṭṭawən*)
tməlli > *tməllawən* “palm dove” (N1p160) (Figuig *tməlla* > *tməllawin*)
tsənti > *tsəntawən* “pillow” (N1p111) (? Awjila *tasūmt* > *tasūmîn* (1))

Some words preserve the initial vowel:

uli > *ulawən* “heart” (N1p70) (Figuig *ul* > *ulawən*)

Plural 6: *i*-...-*iwən* m. / *t(i)*-...-*iwen* f. This too is usually added to an already vowel-final word.

šal > *išaliwən* “land, country” (N1p86) (Awjila *ašāl* > *šālāwen* (5))
azgən > *izəgniwən* “half” (Figuig *azgən* > *izəgnan* (4))
aləfsa > *iləfsiwən* “snake (non-venomous)” (N1p76, N2p99) (Figuig *taləfsa* > *tiləfsiwîn*)
tayma > *təymiwen* “thigh” (N1p67) (Kabyle *tayma* > *taymiwin*)
tadri > *tədriwen* “thorn” (N2p55) (Awjila *ddəri* > *ddrîwin*, El-Fogaha *tadrît* > *tadrîwan*)

Plural 7: *t(i)*-...-*a*, usually from a singular of the form *ti*-...-*ət*. Very productive with Arabic roots, but not especially common with Berber ones. Only attested with feminine nouns.

tmart > *timira* “beard” (N2p219) (Figuig *tmart* > *timira*)
tyatt > *tiyida* “goat” (2009-06-21) (Figuig *tyatt* > *tiyidat* (2))
tsilat > *tisila* “arch of foot” (N1p68) (Kabyle *tisilat* > *tisila* “sandal”)
tazəgnət > *tizəgna* “needle” (N2p219) (Nafusi *tissegnît* > *tessegnâi* (2?)), Kabyle *tissəgnit* > *tissəgnatin* (4), Fogaha *tsegnît* > *tsegnîwin* (6))
tfiyət > *tfiya* “piece (esp. of rock)” (N2p45) (? Kabyle *tifəywəṭṭ* > *tifəywa* “head of artichoke”)

Plural 9: suffixed *-t* (with internal change.) Historically this was used only on a couple of relational terms, notably “son”; in Siwi, traces survive only in a couple of historically compound nouns:

aṃṃ^wa > *itma* “brother” (N1p40), original **u* “son” > **i-t* “sons” + *ma* “mother” (Figuig *yuma* > *ayətma*, El-Fogaha *aṃṃa-* > *ayetma-*)
bunadəm > *itadəm* “person” (also *bunadmən*, 2008-08-03/246), original Ar. **bən* “son” > Ber. **i-t* “sons” + *adəm* “Adam” (cp. Alg. Ar. *bnadəm* “person” < *ibn-* + *ādām-*)

This account leaves out minor complications such as the treatment of vowel-final words, and excludes a few irregular cases, some dropping a root consonant as in *tləčča*

> *təččiwen* “girl” (N2p41), *agbən* > *gbiwən* “house”, some gaining one as in *axxa* > *tixaxxa* “maternal aunt” (N2p41), as well as suppletive plurals like *tar* > *təška* “foot”, *wəltma* > *tisətmə* “sister” (N2p24). Even so, it is clear that, by and large, Siwi has retained the rather complex Berber plural system without significant reduction. The reassignment of words from one plural type to another is not a major change; it is common for the same etymon to take different plural types in different Berber languages, and even as alternates within the same language. If Plural 2 has become rarer, judging impressionistically, it has still remained productive enough to be applied to Arabic loans (see below.) The most significant change in the system is the loss of Plural 11 (*id-*) noted above; but this loss too is common to many Berber varieties (eg Kabyle.) One might speculate that the absence in Arabic of any comparable structure with a plural prefix encouraged its loss; but the fact that, alone among the Berber plurals, it requires no accommodation of the noun to Berber norms, means that elsewhere in Berber it is commonly used as a plural for loanwords (Kossmann 1997:105), so one might equally have expected Arabic influence to increase its frequency.

One change is not apparent in the table above: the development of a new subtype of Plural 1 with the affixes m. *i-...-iyyən*, f. *tī-...-iyyen*, not noted by Laoust and Vycichl. I account for this development through a combination of internal development and external influence, as follows (although more Eastern Berber data would be useful to test this): All Berber languages have borrowed Arabic nouns with the nisba suffix *-iyy-*; these often take Plural 1, with the geminate *yy* dropped from the singular (as in Arabic for masculine nouns) but reappearing in the plural. (For inherited Berber vowel-final nouns, a common solution is to put an epenthetic *-t-* between the stem and the plural – cp. Prasse (1974:73).) Since Siwi has undergone a sound change *i* > *ə* / *_t#* (ie before the feminine suffix), feminine nouns originally ending in *...i-t* with plurals *...iyy-en* ended up with sg. *...ə-t*, pl. *...-iyy-en*, as in:

tšašət > *tšašiyyen* “skullcap” (N2p237; already in Minutoli (1827:357) *تشاشة* *تشاشين* <, ie <tš'št> pl. <tš'šyn>) (El-Fogaha *tšāšīt* “fez”, Kabyle *tašašit* > *tišušay* (2), Figuig *tšašəyt* > *tišušay* (2); all from dialectal Ar., cp. Alg. Ar. *šāšiyy-a*)

Since *ə* is the default epenthetic vowel in Siwi, *-iyy-* would naturally be reinterpreted as

part of the suffix, creating a new subtype of Plural 1 ((*ti-*)...-*iyyen* rather than *ti-...-en*) which was extended to nouns for which there is no evidence that they ever ended in *-i*:

Table 14.

ta-muksa > *timuksaw-iyy-en* “melon” (N1p230, 2009-06-24) (Ouargla *tamisa* “courage coureuse” (Delheure 1987))

ta-ngugəs-t > *tangugs-iyy-en* “wagtail (bird)” (N1p78; Laoust (1931) writes *tamgugəst*)

ta-rfuṭ-ət > *tarfuṭ-iyy-en* “women's garment” (N2p12) (Cl. Ar. *al-fūṭ-at-* “cloth sp.”)

ta-məyyaṭ-t > *ti-məyyaṭ-iyy-en* “women quick to get angry” (2009-06-25/a) < *ən-yaṭ* “get angry quickly” < Ar. *γāḏ-* “anger”

ta-fəllilas-t > *ti-fəlleles-iyy-en* (N2p129) / *tə-flils-iyy-en* (N3p10) “swift, swallow (bird)” (N2p129) (Kabyle *tifiləlləst* > *tifiləllas* (2)); but also given with inherited pl. *tifəllilas* (N1p80)

ta-kəmmaš-ət > *ti-kəmmaš-iyy-en* “pliers” (N3p117) (MSAr. *kammāš-a, -at*)

ṭəmṭmət > *ṭəmṭm-iyy-en* “tomato (count form)” (2009-06-24) (Eg. Ar. *ṭamaṭm-a/-āya*, pl. *-āt*)

Analogy yielded a masculine form ((*i-*)...-*iyyən* after *i-...-ən*) that is likewise being extended:

Table 15.

a-ḥəddad > *i-ḥəddad-iyy-ən* “blacksmith” (2008-04-25/215) (Cl. Ar. *ḥaddād-*)

baṭaṭəs > *baṭaṭəs-iyy-ən* “potato” (2009-06-18a) (Eg. Ar. *baṭāṭis*)

maləṭ > *malṭ-iyy-ən* “turkey” (N2p101) (Eg. Ar. *dīk malṭi* “a cock with a long featherless neck”; Dakhla *malṭa* Truthenne, Bahariya *malṭi, malāṭi* Truthahn (Behnstedt & Woidich 1985).) The singular without *-i* must have been back-formed by reanalysis of the plural.

albaḥḥ > *albaḥḥ-iyy-ən* “black duck” (N3p9) (Eg. Ar. *baḥḥ* “ducks (coll.)”, count *-a*, pl. *-āt*)

əddud > *əddud-iyy-ən* “small ants” (N2p129) (? Cl. Ar. *dūd-* “worm”)

bučičmas > *bučičmas-iyy-ən* “bird sp.” (N3p11)

ərrurəm > *ərrurm-iyy-ən* “reptile sp. (skink?)” (N1p99; speaker uncertain about plural)

However, another factor besides analogy looks likely have encouraged this development. Eastern Libyan Arabic has a plural *-iyy-a* (itself probably generated by reanalysis of the many plurals in *-a* of *-ī*-final nouns) particularly used for foreign loanwords referring to professions, eg *žnārāl* > *žnārāl-iyä* “general” (Panetta 1943:70). At least within the sphere of profession terms, it plays the role of a default plural for items that do not fit into Arabic nominal patterns and hence would otherwise seem difficult to pluralise; many of the words above, such as *bučičmas* or *ərrurəm* or *baṭaṭəs*, appear similarly anomalous within Siwi, and do not take the Berber nominal prefix.

Again like most other Berber languages, Siwi retains Arabic plurals for a high proportion of nouns borrowed from Arabic. The complexity of Arabic's system of broken plurals, exceeding even Berber, is well-known; where a word has multiple alternative plurals, as so often in Classical Arabic, I have cited only the most closely cognate one, even if it is not the most common. To aid comparison, I have annotated the following comparisons with the numbers used by Ratcliffe (1998) where available. He gives the following as productive broken plurals in Classical Arabic (although 3 and 4 can obviously be given a unified treatment), omitting a few types productive only with roots containing a long vowel or glide:

<i>Table 16.</i>			Not listed
1) Ci/uCC	->	<i>ʔaCCa:C, CuCu:C</i>	(CuCu:C-at-)
CaCC	->	CuCu:C, ʔaCCa:C, CiCaaC, (ʔaCCuC)	
CaCaC	->	<i>ʔaCCa:C</i>	(CuCu:C-at-)
2) Ci/uCCat	->	Ci/uCaC	
CaCCat	->	CaCaCa:t, CiCa:C, Ci/uCaC	
CVCVCat	->	CaCaCa:t, CiCa:C	
3) CVCCV(:)C	->	CaCa:Ca(:)C	
4) CV:CVC(at)	->	Cawa:CaC	
CVCV:C(at)	->	CaCa:ʔiC	
5) Ca:CaC	->	CuCCa:C, CaCaCat, CuCCaC	
6) CVCa:C	->	ʔaCCiCat, CuCuC	
CaCu:C	->	CuCuC, ʔaCCiCat	(CaCCa:n)
CaCa:C (n.)	->	CuCaCa:ʔ, ʔaCCiCa:ʔ; CuCuC	(CaCa:Ca:)
CaCa:C (adj.)	->	CiCa:C	- unattested in

Siwi

Of these, the forms in bold are found in Siwi, while the forms in italic are only occasionally attested in my data. The rest are unattested; more detailed lexical data might reveal instances, but they may safely be considered rare in Siwi. Apart from these forms, plurals in *-ān-*, considered irregular in Classical Arabic by Ratcliffe, are found in several cases; their congruence with Berber's Plural 3 perhaps aids their retention.

Table 17.

Cl. Ar. CVCC > CuCu:C / 'aCCuC (1)

Siwi l-CCəC / l-CəCC > l-əCCuC. Note that the article in this plural type in Siwi remains *lə-* irrespective of the following consonant, an anomaly already noted in passing by Laoust (1931:93); were it directly derived from *CuCu:C*, we would expect it

to show its allomorph of gemination with following coronal consonants, as the closely related plural type *l-CCuCa* discussed below does. We could explain this by an anomalous fusion of the two plural types *'aCCuC* > **əCCəC* and *CuCu:C* > **CCuC* to **'aCCu:C*. Such a plural is attested in Yemeni Arabic, but all the sources I have been able to check, if they mention it at all, give the same single example for it: *ʕamm* > *'aʕmūm* (Watson 1993:432). However, in Geez the corresponding plural type not only exists but is regular for singulars of the form *CaCaC* and attested for ones of the form *CaCC* (Ratcliffe 1998:89). There are other likely traces of south Arabian influence in Siwi, such as the treatment of *m* as a “solar” consonant, the presence of addressee agreement, and the actor noun/adjective pattern *a-CəCCeCi* (Souag 2009); if we assume the *'aCCu:C* pattern was more widespread in early stages of Yemeni Arabic, this might fit the same pattern. It should not be surprising to find south Arabian linguistic features in Siwa; the early Arab migrations spread such features as far west as Spain (Corriente 1989).

əddərs > *lədrus* “lesson” (N2p181) (Cl. Ar. *dars-*, pl. *durūs-*)

əššhar > *ləšhur* “month” (N1p139) (Cl. Ar. *šahr-*, pl. *šuhūr-*, *'ašhur-*) (with secondary *ə* > *a* before final *r*)

ənnəzz > *lənzuz* “canal” (N1p160) (Cl. Ar. (*Lisān al-ʕArab*) *nazz-/nizz-* “such water as flows out of the earth”, no pl. given)

əzzənd > *ləznud* “palm-wood stilt” (N3p132) (Cl. Ar. *zand-*, pl. *zunūd-*, *'aznud-* “stick for producing fire”)

əlʕərq > *ləʕruq* “vein” (N2p231) (Cl. Ar. *ʕirq-*, pl. *ʕurūq-*)

əlkaʕf > *ləkʕuf* “palm (of hand)” (N1p69) (Cl. Ar. *kaff-*, pl. *kufūf-*, *'akuff-*)

Without the article (because inalienably possessed):

ʕammi > *ʕmumi* “paternal uncle” (N2p234) (Cl. Ar. *ʕamm-*, pl. *ʕumūm-*)

Cl. Ar. *CaCC* > *CuCu:C-at* (1*)

Siwi *l-CCəC* > *l-CCuCa*. This plural is rather marginal in Classical Arabic, but survives in Egypt and is well-attested in much of North Africa; Heath (1987:108) treats it as the dominant pattern for sound trilaterals in Moroccan Arabic. Yet it seems to be absent or at most marginal in Eastern Libyan Arabic, judging by Owens (1984:61ff), underscoring the fact that most Siwi loans from Arabic have not entered via a Bedouin source. Both this and the previous plural are for original CVCC nouns; it is not clear whether their respective distributions over such nouns can be predicted. In some cases this pattern is attested in Classical Arabic:

ssqar > *ssqura* “hawk” (N1p79, N3p8) (Cl. Ar. *šaqr-*, pl. *šūqūr-at-*; Eg. Ar. *ša'r*,

pl. *su'úra*)

lǎfhəl > *lǎfhula* “(type of) irrigation canal” (N1p182) (Cl. Ar. *fāhl*-, pl. *fuhūl-at*- “stud (animal)”; Eg. Ar. *fāhl*, pl. *fuhūla* “stud bull; irrigation ditch”)

But more often it has replaced a different plural pattern:

zzmar > *zzmura* “flute” (N3p86) (MSAr. *zamar*-, pl. *zumūr*-)

ššbaḥ > *ššbuḥa* “face” (2009-11-11, correcting N2p65) (cp. Cl. Ar. *šubḥ*-, pl. *'ašbāḥ*- “morning; clear/plain thing”.) Earlier sources give a Berber plural, cp. Walker (Walker 1921:61) *sobāhh* > *sobahhàn*, Laoust (1931:174) *šobāḥ* > *šobāḥàn*.

lǎrš > *lǎruša* “long wooden bar on a wagon” (N3p92) (Cl. Ar. *šarš*-, pl. *šurūš*- “the wood upon which stands the drawer of water”; Eg. Ar. *šarīš*, pl. *širšān* “shaft and attached harness (of a cart)”; Western Delta *šariš* Deichsel des Eselkarrens (*karru*) (Behnstedt & Woidich 1985))

rǎbaṭ > *rǎbuṭa* “fence-tie” (N3p89) (Cl. Ar. *ribāṭ*-, pl. *rubuṭ*- “a thing by which one ties or makes fast”) (Eg. Ar. *rubāṭ*, *'arbiṭa/ribiṭa* “tie”)

rǎmʷəl > *rǎmula* “sand” (2009-06-25) (Cl. Ar. *raml*-, pl. *'armul*-; Eg. Ar. *raml*, pl. *rimāl*)

ddhan > *ddhuna* “oil” (2009-10-13) (Cl. Ar. *duhn*-, pl. *dihān*-, *'adhān*-; Eg. Ar. *dihn/duhn*, pl. *duhūn*)

lǎqləm > *lǎqluma* “pen” (N2p5) (Cl. Ar. *qalam*-, pl. *'aqlām*-, *qilām*-; Eg. Ar. *'alam*, pl. *i'lima*, *i'lām*, *'ilima*)

nnbaq > *nnbuqa* “lote-fruit” (N3p111) (Cl. Ar. *nabiq*- coll., count pl. *nabiq-āt*-; Eg. Ar. *naba'* coll., count pl. *naba'-āt*)

lǎdsər > *lǎdsura* “land by side of canal” (N3p103) (Cl. Ar. *jisr*-, pl. *jusūr*-, *'ajsur*- “bridge”; Eastern Delta *jisr* Ufer eines kleinen Kanals (Behnstedt & Woidich 1985)) (the article does not assimilate because *d* < *j*)

Cl. Ar. CVCC > 'aCCa:C (1)

Siwi al-CVC > l-CwaC, a-CCuC > l-CCaC, -aCəC > -aCaC... Rarer than the previous two in general, but commoner with words whose middle radical is *w*.

zir > *lǎzyar* “pot sp.” (N3p103)

alḥoš > *lǎḥwaš* “date-drying yard” (N1p217) (Cl. Ar. *ḥawš*- > *'aḥwāš*- “courtyard”)

alkoz > *lǎkwaz* “metal cup” (N1p271) (Cl. Ar. *kūz*-, pl. *'akwāz*- “cup with handle”)

afrux > *lǎfrax* “chick, bastard” (N1p80; or *fruxən* 2009-06-21) (Cl. Ar. *farx*-, pl. *firāx*-; Siwi sg. probably based on alternative Ar. pl. *'afrux*)

lbūrj > *lǎbrāj* “palm grove, pigeon tower” (N2p48, 239) (Cl. Ar. *burj*-, pl. *'abrāj*- “tower”; Kharja Ar. *barğ* Turm, eine Gruppe von Palmen aus einer Wurzel; Bahariya Ar. *burž* mehrstämmiger Wurzelstock der Palme (Behnstedt & Woidich 1985))

aləf > *alaf* “thousand” (with numbers 3-10 only – “thousands” is *luluf*) (N3p7) (Cl. Ar. *'alf*-, pl. *'ālāf*- (with 3-10), *'ulūf*- (>10); Eg. Ar. *'alf*, pl. *'alāf* (as num. or n.), *'ulūf* (only as n.) Note the retention of the Classical paucal/abundant distinction in this word.)

Without the article (because inalienably possessed):

xali > *xwali* “maternal uncle” (N2p234) (Cl. Ar. *xāl-*, pl. *'axwāl-*)

Cl. Ar. Ci/uCC-at > Ci/uCaC (2)

Siwi I-CəCC(-ət) > I-CCəC. Marginal (and often clearly recent) but attested.

ššūqqət > *ššqūq* “flat (apartment)” (N1p192) (MSAr. *šiqq-at-*, pl. *šiqaq-*)

tʕaššət > *laʕšəš* “hut” (N1p191) (MSAr. *ʕišš-at-*, pl. *ʕišaš-*)

dəš > *dšəš* “satellite dish” (N1p111) (< En. via Eg. Ar.)

Cl. Ar. CVCCV(:)C > CaCa:CaCi(:)C (3)

Siwi I-CəCCə/VC > I-CCaCaCi. Very common and productive. Note the generalisation of *-iC* irrespective of original length.

mmāhbəs > *mmhabis* “ring” (N1p155, 2009-06-27) (Eg. Ar. *maḥbas*, pl. *maḥābis* “clasp, clip (of a necklace, bracelet, etc.)”)

mmərḃət > *mmṛabiṭ* “planting bed” (N1p162) (? Cl. Ar. *marbiḏ-*, pl. *marābiḏ-* “lodging-place, of livestock or humans”, Eg. Ar. *marḃat*, *marābiṭ* “hitching place for livestock, stable”)

əmməyrəb > *mmyarib* “Maghrib prayer, dusk” (N2p9, in idiom *ben-əmmyarib* “time before sunset”) (Cl. Ar. *mayrib-* > *mayārib-*)

lmügbʷaš > *ləmgʷabiš* “tweezers” (N3p117) (instrumental noun from root *qḃš* “take with the ends of one's fingers”)

əlgənfud, *ləgnafid* “hedgehog” (N1p159) (Cl. Ar. *qunfuḏ-*, pl. *qanāfiḏ-*)

lbəryut > *lbrayit* “louse” (N2p230) (Cl. Ar. *baryūθ-* > *barāyiθ-*)

mməsʕuda > *ləmsaʕid* “female donkey” (N1p159) (Cl. Ar. *masʕūd-*, pl. *masāʕīd-* “happy”, by euphemism)

ləʕfa > *lʕfafi* “viper” (N1p76) (Cl. *al-'aʕfā*, pl. *al-'aʕāʕī*)

Also found with historical CV:CV:C, reflecting regional dialectal developments (no available examples have direct Cl. Ar. counterparts)

lʕanus > *ləʕwanis* “lantern” (N1p157) (Eg. Ar. *fanūs-* > *fawanīs-*, from Greek)

əlməšurət > *ləmwašir* “iron pipe” (N2p57) (Eg. Ar. *masūr-a* > *mawasīr* / *-āt*, probably < Persian)

ssiqal > *sswaqil* “lower leg” (N1p67) (Historically a plural of a plural; Cl. Ar. *sāq-* > *sīqān-*)

əlbənṭlun > *ləbnaṭil* “trousers” (N1p133) (Eg. Ar. *banṭalōn*, pl. *manaṭīl*, cp. Fr. *pantalon*, It. *pantalone*)

ččwačim “black people” (2009-06-24) (sg. unattested, but cp. Eastern Libyan Arabic *šōšān(-a)* > *šuwāšīn* (Owens 1984:61))

Cl. Ar. CV:CVC(-at) > Cawa:CaCi, CVCV:C(-at) > CaCa:'iC (4)

Siwi I-CaCaC > I-CwaCaC, I-CCVC > I-CCayəC

lḥafər > *ləḥwafər* “hoof” (N1p198, N2p165) (Cl. Ar. *ḥāfir-*, pl. *ḥawāfir-*)

lkarəm > *ləkwarəm* “chain with precious stones decorating braids” (N1p157, N3p45) (Kharja Ar. *kārim*, *kawārim* “eine Art Perlen (als Hochzeitsgeschenk)” (Behnstedt & Woidich 1985))

ššarəb > *ššwarəb* “lip” (N1p67) (Minutoli (1827:366) *id.*: الشوارب، الشارب)
 (Cl. Ar. *šārib-*, pl. *šawārib-* “moustache”)
ššriṭ > *ššrayəṭ* “tape” (N2p232) (MSAr. *šarīṭ-*, pl. *šarā'īṭ-*)

Cl. Ar. CaCi:C > CuCaCa:', 'aCCiCa:', CiCCah (6)

Siwi CCiC > l-CəCCa

ššir > *lfašra* “sharecropper” (N2p260) (Cl. Ar. *šašīr-*, pl. '*ašširā'*- “one-tenth”)
ašqiq > (*'*)*šəqqa* “(full) brother” (2008-08-03/251) (Cl. Ar. *šaqq-* > '*ašqiqā'*-)
arfiq > *rrəfqa* “friend” (N2p58) (Cl. Ar. *rafīq-* > *rifqah*)

Cl. Ar. CaCīC > CuCaCā', CaCāCā

Siwi CCəC(-i/-əṭ) > CCaC-a

ssmiyyəṭ > *smaya* “name” (N1p109) (Cl. Ar. *ism-*, pl. '*asmā'*-; Eg. Ar. '*ism*, pl. '*asma*, '*asāmī*, but cp. M. Ar. *smiyya* “name” – a remarkable divergence from modern regional Arabic)
afəqri > *ləfqara* “poor” (2009-11-11) (Cl. Ar. *faqīr-*, pl. *fuqarā'*-; Eg. Ar. *fā'ri*, pl. -*yyin* “unlucky”)
litim > *ləytama* / *laytam* (2009-11-11) (Cl. Ar. *yatīm-*, pl. '*aytām-*, *yatāmā*)
lhīyyəṭ > *ləhṭaya* “group of gardens” (N2p143) (Ar.: *ḥaṭiyya*, pl. *ḥawāṭi* “Feld” (Bahariyya) “sandiger (Acker-)Boden am Wüstenrand” (Western Delta) (Behnstedt & Woidich 1985))

al-fuṣlān > əl-fəṣlan (*):

ləḡṣud > *əlḡaṣdan* “young camel” (N2p188) (Cl. Ar. *qaṣūd-*, pl. *qiṣdān-*)

External:

-īn > in (rather marginal in Siwi):

mṛabəṭ > *mṛabṭin* “old man with the power to lay a curse” (N3p49) (Cl. Ar. *murābiṭ-*, -*īna* “warrior manning a frontier-post (*ribāṭ-*)” with post-classical development > “holy man”, cp. M.Ar. *mṛabəṭ* “marabout”)

azrab > *zṛabin* “shoe, shoes” (N2p115) (etymology unclear; perhaps Cl. Ar. *zarābī* “carpets”?)

sudani > *sudaniyyin* “peanut” (2009-06-23) (< Eg. Ar. *fūl sudāni*)

ssna > *ləsnin* “year” (Cl. Ar. *san-at-*, pl. *sin-īn-*) The article's non-assimilation here is surprising, but the same phenomenon is observed in some registers of Algerian Arabic (eg Rabah Driassa *w-əḏwat-ək lə-snin* “and the years have brightened you”) and Kabyle (*ačhal n lesnin* “how many years”²), although not in Eastern Libyan Arabic (Benkato pc.)

-āt > -at:

miyya > *ləmyat* “hundred” (2009-07-01) (Cl. Ar. *mi'-at-*, pl. *mi'-āt-*)

ššwal > *ššwalat* “sack” (N2p237) (Eg. Ar. *šuwāl/šiwāl*, pl. -*āt*)

lḡamyā > *lḡamyat* / *tīḡamiyyen* “okra” (2009-06-25) (Eg. Ar. *bamyā*)

2 <http://imedyazen.blogspot.com/2007/11/fama-lkuca.html>

karru > *karruwat* “cart (for goods)” (N1p197) (ELA *kārru*, *-wāt* < Italian *carro*)

-ah > -a: Rare in my data. My consultants generally preferred *i...-ən* plurals for agential nouns of the form *aCəCCaC* (eg *aṭūbbax* > *iṭabbaxən* “cook” (N2p238)) and nisba nouns (*alibi* > *ilibiyyən* “Libyan” (2009-11-11)), but Naumann's notes (pc) show that some speakers have a strong preference for *-a* with such nouns. This plural is widespread in dialectal Arabic; it is the default in Egyptian for occupational nouns in *-gi* (Gary & Gamal-Eldin 1982:75), and, more comparably, in Eastern Libyan Arabic for occupational nouns of the form *CaCCāC* (Panetta 1943:69). Its use alongside Berber Pl 1 for these nouns is paralleled in Eastern Libyan Arabic, where such nouns may freely take *-a* or *-īn* (Owens 1984:60).

nnəyyag > *nəyyaga* “heron” (N1p79) (actor noun from Cl. Ar. root *nyq* “to croak (eg crow)”) (eg crow)”) (N1p79)

aḏəggali > *ḏəggala* “young worker”³ (N1p275)

As the examples indicate, these are almost invariably identical to Classical Arabic templates, allowing for (as in Algeria and Morocco) regular shift of short vowels > *a*. The cases with unexpected non-assimilation of the article all have counterparts in other dialects. Not all Classical nominal plural templates are represented; but all the most frequent ones are, and other gaps are either coincidental or shared with Libyan and Egyptian Arabic dialects in general. Only one clearly Siwa-specific innovation was found – cases where the Arabic suffix *-at* was preceded by a non-etymological *-iyy-*:

shilf-a > *shilf-at* / *shilf-iyy-at* “turtle” (N2p126) (Cl. Ar. *sulahfā-t-*, pl. *salāhif-*; Eg. Ar. *sihlif-a*, pl. *-āt* / *saḥālif*)

əl-bum-a > *bum-iyy-at* “owl” (N1p74) (Cl. Ar. *būm(-at)-*, pl. *'abwām-*; Eg. Ar. *būm*, unit sg. *-a*, pl. *-āt*)

əs-saḥa > *əs-saḥ-iyy-at* “watch” (2009-06-18a) (Cl. Ar. *sāḥ-at-* “hour”, pl. *-āt*; Eg. Ar. *sāḥ-a*, pl. *-āt*)

bəṣbaṣ-a > *bəṣbaṣ-iyy-át* “torch” (2009-06-27) (cp. Cl. Ar. *bṣṣ* “shine, glisten”; Eg. Ar. *baṣbūṣ(-a)*, pl. *baṣabīṣ* “ember”)

ḡrab-a > *ḡrab^w-iyy-at* “raven” (N3p9) (Cl. Ar. *ḡrāb-*, pl. *ḡirbān-* / *ḡurb-* / *'aḡrib-at-* / *'aḡrub-* / *ḡarābīn-*; Eg. Ar. *ḡrāb*, pl. *ḡirbān* / *ḡirba* / *ḡirība*) – more common was *ta-ḡrab-t*, *ta-ḡrab^w-en*

3 Probably an agent noun = person who bears a cudgel (Eg. Ar. *zu'la*, Bahariya/Kharga *zagla*), often carried by peasants; the *ḏəggala* traditionally had the role of defending Siwa's fields from marauders. Laoust (1931:175) links it with Nafusi *azawali* “poor”, but this is a loanword from the Turkish *zavalli* “poor” found throughout the Maghreb, itself deriving from Arabic *zawāl*, and a correspondence *w – g* is particularly unlikely in such a recent loan.

əl-baṣ-a > *əl-baṣ-at* / *əl-baṣ-iyy-at* “ball” (2009-06-27) (ELA *bāṣ-a*, game sp. – Benkato pc)
lə-kdew-a > *lə-kdew-iyy-at* “squash” (2009-06-25)

I take this to result from analogy with the new subtype of inherited Plural 1 discussed above, already often applied to Arabic words with Berber nominal affixes. The widespread colloquial Arabic plural suffix *-iyya*, also found in Egypt (Wolfdietrich Fischer & Jastrow 1980:91) and Eastern Libya (see above) can scarcely play a direct role here: on the one hand, not one of the comparisons available takes *-iyya* in Egyptian Arabic; on the other, *-iyya* consists of *-iyy-* plus a feminine singular ending (also used dialectally for masculine plurals), whereas all of these consist of *-iyy-* plus a plural ending, always feminine in the case of the Arabic-style plurals.

The interaction between number marking and nominal affixes is noteworthy. It will be noted that all of the Arabic loanwords with Arabic plurals listed above lack Berber nominal affixes, and in fact Arabic plurals appear to be the only plural type found with Arabic loans featuring Arabic articles and lacking Berber nominal affixes. For ones which have adopted Berber nominal affixes, however, there are three possibilities. In one isolated case, an Arabic noun suppletively has a Berber plural:

aryif > *tyara* “bread” (N1p89, N2p1) (Cl. Ar. *rayīf*- “loaf”; El-Fogaha *tagêrī*)

They may adopt the Berber gender/number prefix in the singular but retain an Arabic plural without the Berber affixes and with the Arabic article, as Laoust (1931:93) noted:

albəʃ > *ləbtuʃ* “male goose” (N1p79, N2p101) (Cl. Ar. *baʃ*- “duck”, pl. *biʃāt*;
 Eg. Ar. *baʃ-a*, pl. *-āt*)
afrux > *ləfrax* “chick, bastard” (N1p80; or *fruxən* 2009-06-21) (etym. above)
alhoš > *ləhwaš* “date-drying yard” (N1p217) (etym. above)
alkoz > *ləkwaz* “metal cup” (N1p271) (etym. above)
tgəršət > *ləgruš* “money” (N2p56) (< Ger. *Groschen* via Eg. Ar. *'irš* > *'urūš*,
 with back-formed singular)
tʃaššət > *laʃšəš* “hut” (N1p191) (etym. above)

Nouns which in the singular have no reflex of the Arabic article or of a Berber affix are comparable to some Berber nouns (eg *fus* “hand” > *ifəssən*), and may be considered to fall in this category:

gəlluni > *ləgləlin* “plastic water container” (Eg. Ar. *galōn*, pl. *-āt* < English “gallon”) (N2p11)

Or, more frequently, nouns with Berber nominal affixes simply take a Berber plural:

Table 18.

Plural 1:

aməzdəg > *iməzdigən* “mosque” (N1p232) (early loanword < Cl. Ar. *masjid*-)
aṭṭaw > *ṭṭawən* “light” (N1p219) (Cl. Ar. *daw'*-)
akəddab > *ikəddabən* “liar m.” (N1p193) (Cl. Ar. *kaḏḏāb*-)
taɣrəbt > *taɣrəbʷen* “crow” (N1p79) (Cl. Ar. *ɣurāb*-)
tmaṣərt > *tmaṣiren* “oil press” (N1p217) (Cl. Ar. *maṣsar-at*-)
twərqət > *tiwərqən* “leaf” (N1p150) (Cl. Ar. *waraq-at*-)

Plural 2:

amaṣbus > *imaṣbas* “tail” (N1p269) (passive participle from Cl. Ar. *ṣbs*, cp. *'aṣbasa* “(of camels) have dried urine and dung clinging to their tails”)
tasqəft > *təsqaf* “ceiling” (N1p220) (Cl. Ar. *saqf*-)
taxyamt > *təxyam* “tent” (N2p253) (Cl. Ar. *xaym-at*-)

Plural 3:

agənni > *igənnan* “genie” (N2p21) (Cl. Ar. *jinn-iyy*-)
alfaf > *lfifan* “turban” (N1p75; Minutoli (1827:357) الفيعان < الفاو) (derived from Cl. Ar. root *lff* “fold, wrap”)
albab > *lbiban* “door, gate” (N1p91) (ambiguous – Cl. Ar. *bāb*-, rare pl. *bībān*-)

Plural 7:

ṭhufṛət > *tiḥufṛa* “hole (in earth)” (N1p220) (Cl. Ar. *ḥufr-at*-)
triṣət > *tiriṣa* “feather”, coll. *arriṣ* (N1p198) (Cl. Ar. *rīṣ-at*-)
tbəṭṭət > *tibəṭṭa* “goose f.” (N2p101) (Cl. Ar. *baṭṭ-at*-)
tiqəmhət > *tiqəmhā* “unit of water measurement (1/96th of a day's water, *twəzbət*)” (N2p64) (Cl. Ar. *qumḥ-at*- “enough water to fill the mouth” (*Lisān al-ʿArab*))
tṣətlət > *tiṣətla* “seedling” (N1p183) (Eg. Ar. *ṣatl-a*)

It is notable that Plural 7 seems rather more frequent with Arabic feminine nouns than with Berber ones. Perhaps this stems from a reinterpretation of the Arabic construct state (*-ət*) vs. free state (*-a*) as a Berber singular-plural pair; more likely, it started out as a default plural for nouns ending in *-ət*, which are most often Arabic borrowings.

One measure of the productivity of Arabic plurals is their application to non-Arabic words. By that standard, their productivity is very low: there is only one clear-cut case,

using the *l̥-CCaCəC* plural measure:

agürzni “dog” > *lügrazən* (N1p77)

This word is unattested in Arabic, and is attested quite early in Siwi: Minutoli (1827:355) gives the plural as القرازن <lqr'zn>. Its closest direct analogue is in Awjila <guerzeni> “to bark”, recorded by Muller in the early 1800s (Pacho 1979:319); but, apart from the *r* and the position of the *i*, it is also strikingly similar to a widespread Berber word for “dog” with slightly irregular correspondences (Awjila *gzîn* > *gzînen*, Figuig *agzin* > *igzinən* “puppy”, Zuara *aqzin* (S. Oomen p.c.), Kabyle *aqžun* > *iqʷžan*). The obvious explanation is that it derived from a reshaping of the latter root under the influence of the former; in any event, the word appears to be of Berber origin. Not only the use of an Arabic plural but the choice of this particular plural template is surprising; for one thing, as seen above, the commoner plural of this form is l-CCaCiC, with an *i* in the last syllable; for another, one would expect the final *-i* to be reflected as a final *-a*, **lügrazna* (as in many nisba nouns, eg *aşfidi* > *şşfayda* “Saidi”).

I also heard *zalaq* > *zwaliq* “billy-goat” (N2p49); cp. Awjila *azâlâq* > *zûlîq* (other Berber cognates as far afield as Tuareg are given in Blench (2001).) The speaker expressed uncertainty over the plural, which disagrees with earlier researchers' data (eg Vycichl (2005:206) *izûlâq*), so it probably represents a mere nonce coinage in response to my questions. Nonetheless, even as such, it demonstrates the psychological productivity of Arabic-style plurals.

A problematic possible example, depending on the etymology accepted, is:

lgərbuj > *lgʷrabij* “elbow” (N1p69; Walker (1921:61) *gárrbôj* > *lagrabêj*.)

Awjila *aqarbuz* “stalk, stem of leaf” (Paradisi 1960) is comparable if we allow an irregular correspondence of Awjila *j* to Siwi *z* (Awjila *q*= Siwi *g* is no problem, cp. “kidney”), and a shift from “stem (of leaf)” to “joint” and hence “elbow” is conceivable. On the other hand, if we allow an irregular correspondence of *j* to original *s*, then this can be derived from Cl. Ar. *qarbūs*- “pommel (of a saddle)”, due to its similar shape. Neither etymology is compelling.

If Arabic plurals are applied to borrowings not from Arabic, this too constitutes evidence of productivity. Unfortunately, given the diversity of Arabic dialects and the inadequate lexicographic materials available on them, it is difficult to prove that a word was not borrowed via Arabic. The best relevant candidate is:

lə-kdew-a > lə-kdew-iiy-at “squash” (2009-06-25) Perhaps from a sub-Saharan source - the *d* is problematic, but one thinks of Hausa *kàbeewà* “pumpkin”, with cognates throughout Chadic (Skinner 1996); I take this to have been borrowed into Taznatit and Figuig Berber *t-kabiwa-t*, with the Berber feminine circumfix, and Alg. Ar. *kabuya* “pumpkin” (whose *uy* sequence clearly marks it as non-Arabic.) Not found (neither with *d* nor *b*) in dictionaries of Chadian, Sudanese, and Egyptian Arabic; not recognised by speakers of Eastern Libyan Arabic (Benkato pc.)

Other possible evidence for the productivity of the Arabic plural can be found in its usage with recent Arabic loanwords that, in Cairene Arabic, would take an external plural. This is less convincing, because the dialectal diversity of the region has not yet been fully mapped and there might be a dialect in which they take these plurals; however, if the plurals in question turn out to represent Siwa-specific innovations, they would prove the point:

lʕarbiyya > laʕrabʷi “car” (N1p108, N1p166) (Eg. Ar. *ʕarabiyy-a*, *-āt*)
gəlluni > ləglaʕin “plastic water container” (Eg. Ar. *galōn*, pl. *-āt* < English “gallon”) (N2p11)

The Arabic dual remains in use for a handful of measure terms, as discussed in more detail under Numbers.

2.3.2 Kwarandzyey

As seen above, number in Arabic and Berber is marked on individual words and in particular on the head noun, whereas number in Songhay is marked on the noun phrase as a whole; in southern Songhay, the only nominals that can be inherently marked for

number irrespective of the presence or absence of the NP plural marker are pronouns and numbers used as NP heads. Kwarandzyey combines both systems; the clitic =*yu* marks plurality at the end of the core NP, but a large minority of nouns, mainly but not exclusively loanwords, have distinct plural and singular forms.

2.3.2.1 Semantics

In southern Songhay, inherently plural nouns are rare in general, although available dictionaries suggest that a couple exist, eg Koyraboro Senni *daaru-hay-ey* “things to be laid out, (table) settings” (no sg. given.) Liquids (eg KC *hari* “water”), paired items (eg KC *kambu* “pliers sp.”), and grains (eg KC *gãyši* “fonio”) do not require the plural marker. Verbal nouns are marked by an ending almost invariably homophonous to a plural ending; however, such nouns are in fact number-neutral, and compatible with further plural or singular markers (Heath 1999b:89). In Arabic, likewise, liquids, paired items, grains, and verbal nouns are all normally grammatically singular. In Berber, on the other hand – as seen above – all except the verbal nouns tend to be grammatically plural.

Kwarandzyey has developed a number of inherently plural nouns. They include at least one inherited Songhay item:

gnəy=yu “utensils, stuff” (**gnəy*)

Deverbal nouns (see Verbs), except where used as count forms, are formed with the =*yu* clitic, which behaves syntactically exactly like the homophonous plural marker, being separated from the stem by adjectives and low numbers:

2.60 *g^wa=f^v* *hənnu=yu*
 sit=one good=PL/VN
 some good sitting-down (N6p62)

as well as, like the plural marker (see “Case” below), turning into =*i* in non-topicalised

subjects directly adjacent to the verb:

- 2.61 *flaḥəqqaš tərfaš n dzüγ=i=hnən*
 because truffle GEN uproot=3P=good
 Because truffle-picking is great. (N6p133) (Arabism – “truffle” should be *tsərfaš*)

- 2.62 *bəššəḥ an sku=i=ggəb*
 but 3S.GEN caught=3P=difficult
 But its being caught (for it to get caught) is hard. (2008-01-01/05)

and genitive markers and postpositions:

- 2.63 *lwəqt dzüm=i win*
 time sow=PL G2
 the time of sowing (2008-12-30/17)

The most economical interpretation of these facts is that deverbal nouns are simply bare verb stems which (unless turned into count forms) are automatically assigned inherent plurality in Kwarandzyey, and that the =*yu* they take reflects this rather than being a deverbal nominalising morpheme that coincidentally happens to be homophonous, occur in the same positions, and undergo the same idiosyncratic merger with subject markers.

Berber loanwords referring to paired items or items consisting of multiple equal parts remain grammatically as well as formally plural, eg:

- 2.64 *a-dḍəb iṣawrən kuk=yu*
 3S-wear trousers long=PL
 he's wearing long trousers (N6p54)

Examples include:

isawrən “trousers” (Zenaga *(ə)šrāwyän* (no sg.), MA *asərwal* > *israwəl*n,
Ouargli *asrawil* > *israwilən*, Cl. Ar. *sirwāl*-)

tsiməkṛaḍən “scissors” (Zenaga *tāmkuruḍ* > *təmkṛaḍən*)

iṣubən “three rocks on a fire to support a pot” (? cp. Cl. Ar. *minṣab*- “trivet”,
presumably via Berber)

Some native speakers of Kwarandzyey carry this feature over into their Arabic, as in the following code-switching example:

2.65 *ləmḳəss=dzi* *walu ma lgi-t-hūm-š*
scissors=ANA no NEG find-1SPf-3PIObj-NEG2
K/A =K K/A A A-A-A-A (K=Kwarandzyey, A=Arabic)
Those scissors - no, I didn't find them. (N9p52)

Inherent plurality is less well attested in Arabic loanwords, but includes constellation names, eg *ləmsabiḥ* “Orion's Belt”, corresponding to Hassaniya *lməšbūḥ*, lit. “the crucified/stretched out one” (Monteil 1949) and *əsswabəf* “the Big Dipper”, from the root *sbf* “seven” (equivalent singulars referring to a single star in the constellation are unattested), as well as the common word *lhəybuš* “children”, corresponding to Moroccan Arabic *hībūš* “*n. coll.* jeunes poux; poux, vermine du corps et des vêtements (terme poli pour *qməl/gməl*)” (Prémare 1993). For a similar development, presumably motivated by fear of the evil eye, cp. Tumzabt *burəxs* “enfants, surtout garçons” (Delheure 1984) = “grillon, criquet, grande sauterelle” elsewhere in Berber (Naït-Zerrad 1998:s.v. BRXS/§ 2). Thus:

2.66 *lhəybuš* *kədda=yu*
children small=PL
the little children (* *lhəybuš kədda*)

On the other hand, the effects of Berber in this domain are substantially less than in Tadaksahak, where liquids such as “water” or “blood” have become grammatically plural. In Kwarandzyey, these remain singular, eg:

- 2.67 *albasan* *n* *ir=γu*, *a-yyanuw*
 reservoir GEN water=DEM, 3S-cold
 This reservoir's water, it's cold. (2007-12-28/04)

Even in Berber loans, borrowed plural morphology is not always a sign of plurality. *tsəmzən* “barley” (N1p124) (Figuig *timzin*, plurale tantum) and *igərwən* “sky” (Zenaga pl. only *igənwän*; Tachelhiyt *igənni* > *igənwən*, Ouargli *ažanna* > *ižənnwan*) have been borrowed with their plural morphology, but have no intrinsic number, and are singular by default:

- 2.68 *tsəmzən* *yəra*
 barley yellow
 yellow barley (2007-12-21/31)
- 2.69 *igərwən* *a-b-kən-ts=a.ka*
 sky 3S-IMPF-fall-hither=3S.LOC
 The sky will fall in on it. (2007-12-21/31)

2.3.2.2 Head-internal plural morphology

2.3.2.2.1 Berber-style plurals

The commonest and most productive head-internal plural types are of Berber origin. Prasse's classification, seen above as adjusted for Siwi but repeated here with his internally reconstructed Proto-Berber forms, and minus Plurals 8, 9, and 10 (archaisms restricted to one or two nouns apiece; Plural 9 is reflected in Kwarandzyey only in the family name formative *its-* “sons/tribe of”), and Plural 11 (formed with a plural word *d/id/idd* placed before the noun, with no Kwarandzyey counterpart), is as follows; the ellipsis sign is used to refer to a stem with unmodified internal vocalisation:

<i>Table 19.</i>	stem	suffix	
Plural 1	...	- <i>an</i> m. / - <i>i:n</i> f.	
Plural 2 (conserved)	- <i>u(:)-a-</i>	∅	(length of ablauted vowel)
2b	- <i>i(:)-a-</i>	∅	
Plural 3	- <i>u/i-</i>	- <i>a:n</i> m. / - <i>i:n</i> f.	
Plural 4	- <i>a:-</i>	- <i>an</i> m. / - <i>i:n</i> f.	
Plural 5	...	- <i>a:wan</i> m. / - <i>a:wi:n</i> f.	
Plural 6	...	- <i>i:wan</i> m. / - <i>i:wi:n</i> f.	
Plural 7	- <i>u/i-</i>	- <i>a:</i>	

The prefix, which he discusses separately, is to a first approximation **i:-* for masculine plurals and **ti:-* for feminine ones. With a sound change of short **i/u/a > ə*, these types apply equally well to most Northern Berber languages, including Middle Atlas Tamazight, Figuig, and Taznatit; as seen above, it works for Siwi as well.

The situation in Zenaga, on the other hand, shows important differences which have not yet been fully accounted for, only partly due to the retention of original short vowel quality but not length distinctions, in contrast to Northern Berber which has retained (reflexes of) length distinctions but not of short vowel qualities. Taine-Cheikh (2006) makes the most conspicuous differences clear: in contrast to other Berber languages, Zenaga has short vowels in the feminine (-*ən*) as well as the masculine (-*än*), and has rather consistently added -(*V*)*n* to Plurals 2 and 7, with only rare optional archaisms (*taɣmmärt* “beard” > *tuɣmmuɾa[ɣn]*) attesting to the original situation. She only catalogues vocalic alternations rather than fully explaining them, but notes that the predominant vowel patterns for plurals display *a/ä* in the last vowel outside the suffix.

Berber plurals in Kwarandzyey show rather strong similarities to the Zenaga situation, even when applied to words for which no Zenaga cognate is known. The final *-n* in Berber already marks most plural types; in Kwarandzyey as in Zenaga, it was generalised to all of them, obscuring the distinction between 2 and 1 (for C-final words) or 2, 3, and 7 (for V-final words.) For most speakers in Kwaɾa (but not Ifrənyu), a further generalisation has taken place: a pleonastic *-ən* has been added to plurals in *-an*, ensuring that all productive Berber plural types end in *-ən*, and allowing *-an*, *-ayən*, and *-awən* plurals all to be reinterpreted as *-aC-ən* plurals with different filler consonants

stuck inside to avoid hiatus. Remarkably, the addition of *-n* to Plurals 2 and 7 may be a specifically Zenaga innovation within Western Berber: Tetserret seems not to display it (eg *talla* > *tillaw* “coussin” (Lux)), although the impact of Tuareg and the paucity of data means this must be treated with caution. If borne out, this suggests that the Western Berber variety that influenced Kwarandzyey was of a specifically Zenaga type, making it more probable that that influence occurred in Tabelbala rather than before reaching it.

Table 20.			Likely	Main source
Prefix	Stem	Suffix	model	
(<i>ts</i>) <i>i</i> -	... <i>u</i> ...	<i>-ən</i>	1	words ending in <i>-uC</i>
(<i>ts</i>) <i>i</i> -	... <i>aC</i>	<i>-ən</i>	1+2	words ending in <i>-aC</i> , words that
took Pl 2				
(<i>ts</i>) <i>i</i> -	... <i>a</i>	<i>-n[ən]</i>	2+3+7[+1]	words ending in <i>-V</i> , words that took
Pl 3 / 7				

Another four minor types are too infrequently attested to generalise about the sources of:

(<i>ts</i>) <i>i</i> -	... <i>a</i>	<i>-wən</i>	5
(<i>ts</i>) <i>i</i> -	... <i>a</i>	<i>-yən</i>	5 (6?)
<i>i</i> -	...	<i>-ən (-ǃn)</i>	1
∅	...	<i>-an</i>	3 (or < Songhay?)

Note that the “feminine” plural, like the masculine one, ends in *-ən*. In Northern Berber the feminine plural ends in *-in*; the common laxing of vowels in final closed syllables might be expected to turn this to *-ən*, but this could equally well be explained as Zenaga influence. The same sound change has more clearly acted to increase apophony; the vowel reduction affected final syllables, but left the same syllables intact when plural *-ən* was added.

2.3.2.2.1.1 In (*ts*)*i*-...*aCən*

The plural in (*ts*)*i*-...*aCən* is the commonest type for consonant-final nouns. Most instances of this plural appear to derive from regular Berber external plural of nouns with *a* in their last syllable, eg:

Table 21.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
sparrow	<i>abərɖən</i>	<i>abərɖal</i>	<i>abərɖal</i>	-	-	
>	<i>ibərɖanən</i>	<i>ibərɖaln</i> [1]	<i>ibərɖalən</i> [1]	-	-	Attested only in Kwara; Ifrənyu has <i>ibərɖən</i> , -yu
stranger (m.)	<i>abərɾən</i>	<i>abərɾani</i>	-	-	-	Ultimately < M. Ar. <i>bərɾani</i>
>	<i>ibərɾanən</i>	<i>ibərɾaniyn</i> [1]	-	-	-	
in-law (m.)	<i>aɖəbbər</i>	<i>aɖəgg^wal</i>	<i>aɖəkk^wal</i>	-	<i>aɖabbäy</i>	
	<i>iɖəbbaɾən</i>	<i>iɖulan</i> [3]	<i>iɖəwlan</i>	-	< <i>aɖabbedj en</i> >, < <i>aɖubbujū n</i> >	
billy-goat	<i>amkkən</i>	-	-	-	<i>ämkan</i> “jeune bête (tout animal de pâturage)”	
>	<i>imkkan[ən]</i>	-	-	-	<i>əmkanän</i>	(N7p12, N10p35)
anklet	<i>axərɣər</i>	<i>axəlɣal</i>	<i>axəlɣal</i> (Sahli 2008:121)	(<i>taxəlɣalt</i> “cheville”)	<i>aḥḥäyḥiy</i>	Ultimately < Arabic <i>xalɣāl-</i>
>	<i>ixərɣarən</i>	<i>ixəlɣalən</i> [1]	-	(<i>tixəlɣalin</i> [1])	<i>əḥḥäyḥayä n</i>	(N9p104)
room	<i>mməs</i>	<i>mmas</i> “milieu”	<i>mmas</i> “milieu”	<i>mmas</i> “le milieu”	<i>ämḡäs</i> “intérieur”	
>	<i>immasən</i>	-	-	-	-	(N1p196)
abaya	<i>tsəxsəbts</i>	<i>taqəššabit</i> “tunique longe”	<i>taqəššabt</i> “piece of woolen weave”	<i>aqəššab</i> “gandoura en laine”	-	
>	<i>tsixsabən</i>	<i>tiqəššuba</i>	<i>tiqəššabin</i>	<i>iqəšwab</i>	-	

		[2]	[1]	[2]		
paper, letter	<i>tsagərɖəs</i>	-	-	-	<i>taʔgarɖaS</i>	
>	<i>tsigərɖəsən</i>	-	-	-	<i>tiʔgarɖašən</i>	
horn	<i>tsaskəwts</i>	-	-	<i>aššaw</i>	<i>təskäh</i>	
>	<i>tsiskawən</i>	-	-	<i>aššawən</i> [1]	<i>täskün</i>	
bird sp. (hoopoe?)	<i>tsazəbḥənt</i> <i>s</i>	<i>tasiwant /</i> <i>tašiwwant</i> “milan”	<i>tasiwant</i> “grand oiseau des montagnes ”	<i>tasiwant</i> “oiseau de proie (milan?)”	-	
>	<i>tsizəbḥənən</i>	<i>tisiwanin</i> [1]	<i>tisiwanin</i> [1]	<i>tisiwanin</i> [1]	-	(N6p121)

Its historical productivity is demonstrated by its application to at least one Songhay word also with original **a* in the last syllable:

tsarəw > *tsirawən* “spoon” (Songhay; cp. Tagdal *še:rāw*, Tasawaq *sé:rāw*, Emghedesie <*kérau*>, Zarma *káwrà* - Nicolai (1981:281))

However, a large number of words in this class come from singulars which originally had *ə* in the last syllable:

Table 22.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
marabout	<i>amaməɖ</i>	<i>amrabɖ</i>	<i>amrabəɖ</i>	-	-	Ultimately < Cl. Ar. <i>murābiṭ-</i>
	<i>imaməɖən</i>	<i>imrabɖən</i> [1]	<i>imrubɖən</i>	-	-	
traditional purse	<i>aqrəb</i>	<i>aqrab</i>	<i>ləqrab</i>	<i>aqrab</i>	-	
	<i>iqrabən</i>	<i>aqrab</i> [1]	<i>ləqrabat</i> [Ar]	-	-	(N5p107)
sack	<i>ašagəš</i>	<i>asgərs</i>	-	-	<i>äššä^wgrəš</i>	Metathesis

						<i>gər > ərg > əg</i>
>	<i>işaqaşən</i>	<i>isugras</i> [2]	-	-	<i>əššugräššän</i>	(N9p112)
heel	<i>awrəz</i>	<i>iwərz</i>	-	-	<i>äwrəž</i>	
>	<i>iwraqən</i>	<i>iwərzən</i> [3]	-	-	<i>ūrižän</i>	(N1p81, N8p61)
tooth	<i>tsaymməst</i>	<i>tuyməst</i>	<i>tiyməss</i>	<i>tiyməst</i>	-	
>	<i>tsiymasən</i>	<i>tuymas</i> [2]	<i>tiymas</i> [2]	<i>tiymas</i> [2]	-	(N1p268)
ewe	<i>tsazəmmən</i> <i>ts</i>	<i>tizimmərt</i> “agnelle qui ne tête plus”	<i>tizmərt</i> “ewe- lamb”	(<i>izma</i> “mouton soudanais”)	-	
	<i>tsizəmman</i> <i>ən</i>	<i>tizimrin</i> [1]	<i>tizmarin</i> [4]	(<i>izmatən</i> [1])	-	(N1p164, N10p36)
road	<i>tsayqazəmts</i>	(<i>ayaras</i>)	-	<i>tizəmmət</i>	(<i>tä^wrəš</i>)	Assuming a blend of <i>tazəmmət</i> + <i>ayaras</i> ; otherwise problematic
>	<i>tsiyqazamən</i>	(<i>iyarasn</i> [1])	-	<i>tizəmmatin</i>	(<i>tuʔršaʔn</i>)	
palm (of hand)	<i>tsaskkərts</i> , <i>tsiskkərts</i> , <i>tsiktərts</i>	<i>tidikəlt</i>	-	-	<i>ədīgiy</i>	
>	<i>tsiskkarən</i>	<i>tidukal</i> [2]	-	-	<i>ədīgiyän</i>	(N1p67). Also - <i>yu</i> .

In all these cases, this can plausibly be motivated by original vowel ablaut of either the last vowel of the stem or the last vowel of the plural form to *a*; but in every case an originally more irregular plural formation has been regularised to fit the pattern *(ts)i-....aCən*. The same probably applies to the few cases with historic *-*i*- in the final syllable:

Table 23.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
rooster	<i>izzəḍ</i>	-	<i>yaziḍ</i>	<i>iaziḍ</i>	<i>äwäžud</i> / <i>äwäyžud</i>	Cp. Kabyle <i>ayaziḍ</i> >

						pl. <i>iyuzaḍ</i> [2]
>	<i>izzāḍān</i>	-	<i>iyazīḍān</i> [1]	<i>iazīḍān</i> [1]	<i>uwaḗuḍān</i>	
corridor, reception room	<i>tsasəqqəḗts</i>	<i>tasqift</i>	<i>tasqift</i> “toilette”	<i>tasqift</i>	-	Ultimately < M. Ar. <i>sqif-a</i>
>	<i>tsisəqqəḗn</i>	<i>tisqifin</i> [1]	<i>tisqifin</i>	<i>tisqifin</i>	-	(N1p67, N5p225) - <i>yu</i> plural also attested.

The above explanation is supported by out-comparison for the words with historic **u* in the last syllable that have entered this class:

Table 24.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
jinn, devil	<i>ag^wəḍ</i>	-	-	-	< <i>ogrodh</i> >	
>	<i>ig^wəḍān</i>	-	-	-	<i>ugruḍān</i>	(N1p217)
square seed-bed	<i>agūḡḡ^wūn</i>	<i>agəmmun</i>	<i>ayəmmun</i> “champ”	<i>agəmmun</i>	-	Cp. Temacine <i>ayəmmun</i> > <i>iyəmmān</i> [2] (Ghettas pc)
>	<i>igūḡḡ^wān[ən]</i>	<i>igəmmunn</i> [1]	<i>iyəmmunə n</i> [1]	<i>igəmmunə n</i> [1]	-	(N1p227, N9p80)
gazelle	<i>azūnk^wəḍ</i>	-	-	-	<i>äžänkuḍ</i> “gazelle dorcade”	Also attested with = <i>yu</i>
	<i>izūnk^wəḍān</i>	-	-	-	<i>äžänkuḍān</i>	

Inconveniently for historical analysis, a number of words in this class have unclear etymologies:

abbag > *ibbagən* “tale, story” (also -*yu*; N1p91)

akəḗḗḗḗḗḗ > *ikəḗḗḗḗḗḗ* “bale” (N5p197)

asiləy > ?*isiləyən* “puddle” (N6p85; consultant uncertain about plural) (Cp. MA

iliy, *-ən* “petite rivière”, *allay* “fond”, *talayt* “terre très humide”)

asudəd > *isudadən* “pulley-support” (N1p261) (probably instrument noun from Zenaga WDD “stand”, **asəwdVd*, but last vowel unclear)

tsasəkməts > *tsisəkmətsən* “elbow” (N1p81) (Probably instrument noun from same root as pan-Berber, eg MA *tiymərt*, *tiymrin*; but last vowel unclear)

or comparanda whose vowels vary (although in the former case all comparanda have *a* in the plural anyway):

Table 25.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
spot	<i>tsanəqqəd</i>	<i>tanəqqiṭt</i>	<i>tinəqqət</i>	-	<i>tanquD</i>	< Ar. <i>nuqt-at-</i> .
>	<i>tsinəqqadə n</i>	<i>tinəqqad</i> [2]	<i>tinəqqad</i> [2]	-	<i>tunqadən</i>	
bird sp. (wheat ear)	<i>azərrag/ azərrəg</i>	-	-	-	-	(Ifrenyu: <i>azərrig</i>)
>	<i>izərragən</i>	-	-	-	-	

2.3.2.2.1.2 In (ts)i-....<u>...-ən

A rarer class for consonant-final nouns is (ts)i-....<u>...-ən, with *u* substituting not just for the last vowel but for any vowels within the stem. In every case whose etymology is clear, this is historically correct for the last vowel, which derives from an original **u*, presumably via an external plural, but is not necessarily etymologically correct for other stem vowels:

Table 26.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
brick	<i>aḍḍəb</i>	<i>ṭṭubiyt</i>	coll. <i>uṭṭub</i> , sg. <i>tuṭṭubt</i>	<i>aṭṭub</i>	-	Ultimately from Ar. <i>aṭ-ṭūb-</i> (whence En. <i>adobe</i>)
>	<i>iḍḍubən</i>	<i>ṭṭubiyat</i> [Ar]	<i>tuṭṭubin</i> [1]	-	-	(N8p123)
burnous (clothing)	<i>abənəs</i>	-	-	<i>abanus</i>	-	

sp.)						
>	<i>ibunusən</i>	-	-	<i>ibərnas</i> [2]	-	(N8p73, N7p34)
parcel	<i>ammūs</i>	<i>akmmus</i> “gros balot noué ; gros nouet ; baluchon”	-	<i>takəmmust</i> “poignée de qqch.”	< <i>tegmous</i> > “sac” (GMS)	
>	<i>immusən</i>	<i>ikmmusn</i> [1]	-	-	< <i>tegmoušēn</i> >	(N5p188)
sheep's head (in cooking)	<i>azrəf</i>	<i>azəllif</i> “tête; tête du mouton ou de chèvre passée au feu”	<i>azəllif</i>	-	-	Ultimately < M. Ar. <i>zəlluf</i> / <i>zəllif</i> “id.” < Ar. <i>zlf</i> “burn”
	<i>izrufən</i>	<i>izəllifn</i> [1]	<i>izəlfən</i> [3]	-	-	(N3p2) Also with <i>yu</i> for some speakers.
bride	<i>tsəməməš</i>	-	-	-	<i>təmərwuS</i>	
	<i>tsimūmušə</i> <i>n</i>	-	-	-	<i>tmərwäššə</i> <i>n</i>	(N9p28)
maiden	<i>tsangūd</i>	-	-	-	-	Cp. Tadaksaha <i>təngud</i> > <i>tiŋgádən</i> “girl”
	<i>tsingudən</i>	-	-	-	-	(N8p90)
lock (of hair)	<i>tsagəddəs</i>	<i>tagəttuyt</i>	-	-	<i>tuguttiʔd</i>	Cf. Kossmann 1999 #343: Med. Tashelhiyt <i>tagəttušt</i>
	<i>tsigəddusə</i> <i>n</i>	<i>tigəttuyin</i>	-	-	<i>tuguttäyn</i>	(N5p52)
stake	<i>tsagūs(t)</i>	<i>tag^wust</i>	-	-	-	
	<i>tsigusən</i>	<i>tig^wusin</i> [1]	-	-	-	(N1p218)

The original form of one member of this class is unknown (pan-Berber *adaḍ* “finger” is

presumably related, but the *g* remains to be explained):

agəddəd > *igəddudən* “finger”

2.3.2.2.1.3 In (ts)i-....-Can[ən]

Another rather common plural formation, of diverse origins, is (ts)i-....-Can[ən]; the longer form with -ən is common in Kwarə but not used in Ifrənyu. This is applied to a significant number of consonant-final nouns, including ones whose historic last vowel was *i, *u, or *ə. In such nouns, it often reflects the most closely corresponding Berber plural, Prasse's Plural 3 – but, interestingly, it also occurs with feminine nouns, which in northern Berber take -in rather than -an in this plural type:

Table 27.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
chick	<i>tsafəlləs</i> (Ifr.)	<i>tafullust</i> “poule”	<i>fullus</i>	<i>fullus</i>	-	In Kwara, <i>gung^wa- kədda</i> is used.
>	<i>tsifəlsan</i>	<i>tifullusin</i> [1]	<i>ifullusən</i> [1]	<i>ifullusən</i> [1]	-	(N5p27)
lip	<i>adrəş</i>	-	-	<i>adliš</i>	-	Cp. Nait- Zerrad, DLS 4
>	<i>idərşən[ən]</i>	-	-	<i>adlišən</i> [1]	-	(N10p10, N1p219, N1p279)
kidney	<i>tsagəzzərts</i>	<i>tigzəlt</i>	-	-	<i>tagzəL</i>	
>	<i>tsigəzrən(ə n)</i>	<i>tigzlin</i> [1/3]	-	-	<i>tugzäyin</i>	(N1p263, N6p15, N6p114)
intestine	<i>aşəm</i>	<i>aşrəm</i>	-	-	-	
>	<i>işəmən[ən]</i>	<i>işərman</i> [3]	-	-	-	(N1p121)
she-camel	<i>tsarəmts</i>	<i>talyəmt</i>	<i>talyəmt</i>	<i>taləmt</i>	<i>täyiɓmt</i>	(N1p212)
>	<i>tsirman</i>	<i>tiləymin</i> [3]	<i>tiləymin</i> [3]	<i>tilmin</i> [3]	<i>tiɓymən</i>	Some

						prefer -yu.
buttock, hip joint	<i>tsaməssəḍ</i>	<i>iməsli</i> “fesse, flanc”	<i>aməşşad</i> “cuisse” (Kossmann 1997); <i>taməşşat</i> “thigh” (Sahli 2008:65)	<i>tamsaṭ</i> “cuisse”	<i>ämāštʰ</i> “fesse”	
>	<i>tsiməşdan</i>	<i>iməslan</i> [3]	<i>iməşdan</i> [3]	<i>timəşdin</i> [3]	<i>əmuštʰän</i>	(N9p125)
tent, (spider) web	<i>tsaxəyyəmt</i> s	(<i>axam</i>)	(<i>axyam</i>)	<i>taxamt</i>	-	Ultimately < Ar. <i>xaym-at-</i>
>	<i>tsiximanən</i>	(<i>ixamn</i> [1])	(<i>ixuyam</i> [2])	<i>tixamin</i> [1]	-	(N1p64, N7p50)
bit, piece	<i>agəḍḍəm</i>	<i>agəṭṭum</i> “longue tige; baguette, branche de petite dimension, rameau”	-	-	<i>agəḍmi</i> “tout morceau de bois”	
	<i>igəḍmanən</i>	<i>igəḍman</i> [3]	-	-	<i>uḡuḍmaʔn</i>	(N8p123)
big lump	<i>aqəlləm</i>	<i>aqəlləm</i> “marcot- tage”	-	-	-	
	<i>iqəlmanən</i>	-	-	-	-	(N9p64, N6p94)
hind leg of grasshoppe r	<i>akrəd</i>	-	-	-	-	Cp. Ouargli <i>akrad</i> > <i>akradən</i> [1] “petit criquet, petite sauterelle qui ne vole pas”
	<i>ikərdan</i>	-	-	-	-	(N5p296, N7p49)
palm shoot	<i>agʷəl</i>	-	-	-	<i>oʔgulli</i>	Cp. Chl.

/ grove not deliberately planted					“jardin, terrain de culture”	<i>iggl</i> “jeune plante, jeune pousse” (Boogert 1998)
	<i>ig^wəllan[ən]</i>]	-	-	-	<i>uɔgullän</i>	(N5p221, N1p217)

However, this plural type is most commonly used with vowel-final stems (excluding the feminine ending *-ts/t* from the stem). Most commonly, the *a* replaces the final vowel. This happens in two sets of circumstances: for etymological vowel-final words ending in *-a* or *-i* (none ending in *-u* have been observed):

Table 28.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Zenaga	Notes
mouse	<i>aɣarza</i>	<i>aɣərda(y)</i>	<i>aɣərda</i>	<i>aɣahda</i>	-	
>	<i>iɣarzan[ən]</i>]	<i>iɣərdayn</i> [1]	<i>iɣərdayən</i> [1]	<i>iɣəhdan</i> [1]	-	(N6p63, N7p34)
irrigation canal, canal-irrigated garden	<i>tsarɣa</i>	<i>targa / tarwa / tarʒa</i>	<i>targa</i>	<i>tahga</i>	-	
>	<i>tsirgan[ən]</i>]	<i>tirgg^win</i> [3]	<i>tirəgwin</i> [3]	<i>tahgwin</i> [3]	-	(N9p80)
pack-saddle	<i>tsabarɣa</i>	<i>tabarda</i>	<i>tbarda</i>	-	-	Ultimately < Ar. <i>bardaʕ-at-</i>
>	<i>tsibarɣan</i>	<i>tibardiwin</i> [6]	<i>tbardiwin</i> [6]	-	-	(N5p14)
co-wife	<i>tsakna</i>	<i>takna</i>	<i>tašna</i>	-	-	
	<i>tsiknanən</i>	<i>takniwin</i> [6]	<i>tišənwin</i> [1] / <i>tišna</i> [2]	-	-	(N5p31)
fennec	<i>ak^wasi</i>	<i>aqūršan</i> (Ayt Khebbach, own data)	-	<i>aɣəršiw</i>	<i>ağərši / ağəršäy</i>	
>	<i>ik^wasan[ən]</i>]	-	-	<i>iɣəršiwən</i> [1]	<i>ğuršäyän / ğəršäyän /</i>	(N5p189)

					<i>aǧəršäwn</i>	
acacia	<i>aṃaḍi</i>	-	-	-	<i>ämāräd,</i> <i>t(ä)māräd</i>	
	<i>imāḍan</i>	-	-	-	<i>tmārädən</i>	(N1p268.) Rare; most speakers use - <i>yu</i> and reject this plural form.
collared dove	<i>tsamalli</i>	<i>tamalla</i>	<i>tmalla</i>	<i>tmalliwt</i>	<i>iʔmilli</i> “pigeon, tourterelle”	
>	<i>tsimallan[ən]</i>	<i>timilla(tin)</i> [2b(+1)]	<i>timalliwin</i> [6]	<i>timalliwin</i> [1]	<i>aʔmällän</i>	(N10p35)
X-shaped saddle	<i>tsahwits</i>	<i>tahawiyt</i>	-	<i>tahawit</i> “palanquin où se tiennent les femmes lorsqu'elles voyagent à dos de chameau”	-	
>	<i>tsihwanən</i>	<i>tihawiyin</i> [1]	-	<i>tihway</i> [2b]	-	(N1p214, N9p24)
amphora, storage jar	<i>tsaxabits,</i> <i>tsaxabəts</i>	<i>taxabiyt</i> “jarre en terre; grand cruche, gargoulette”	<i>txabəyt</i>	-	-	Ultimately < Ar.
>	<i>tsixabanən</i>	<i>tixubay</i> [2]	<i>tixubay</i> [2]	-	-	(N5p226)
sandgrouse	<i>tsagərṛəts</i> / <i>tsagərṛart</i>	-	<i>tžirnətt</i> “sorte d'oiseau jaune”	-	-	Cp. Chl. pl. <i>tigrnad</i> / <i>tigrnatin</i> (Boogert 1998)
>	<i>tsigərṛan[ən]</i>	-	<i>tižirna</i> [7]	-	-	(N5p192, N6p13)

and for etymologically *r*-final words which have lost the *r*:

Table 29.

	Kwarandz yey	Middle Atlas	Figuiq	Taznatit	Zenaga	Notes
wall	<i>agada</i>	<i>agadir / ayadir</i>	-	-	-	(Nait- Zerrad GDR 1)
>	<i>igada[n]</i>	<i>igudarn</i> [2]	-	-	-	
chest (of body)	<i>azma</i>	<i>admər</i>	-	-	<i>ädməri</i>	
>	<i>izmanən</i>	<i>idmarn</i> [4]	-	-	<i>ədməräwn</i>	
mountain	<i>aḍra</i>	<i>adrar</i>	<i>aḍraḥ</i>	-	-	(many use <i>yu</i>)
>	<i>iḍḥann</i>	<i>idrarn</i> [1]	<i>iḍraḥən</i> [1]	-	-	(N8p118)
beam, trunk	<i>asūqqʷa</i>	<i>tazəqqurt</i>	-	<i>azəqqu</i>	<i>(äššäʔr)</i>	
>	<i>isūqqʷanən</i>	<i>tizəyrin</i> [3]	-	<i>izəyran</i> [3]	<i>(šaʔrän)</i>	(N1p238)
sinew, root	<i>azuwwa</i>	<i>azur</i> “racine”	<i>azwər</i>	-	<i>ažūr</i> “intestin”	
>	<i>izuwwan[ə n]</i>	<i>izurən</i> [3]	<i>izəwran</i>	-	<i>užūrän</i>	
snot	<i>ašanša</i>	-	<i>ansar</i> “moucher”	-	<i>äʔšənšər</i> “fait de se moucher”	
>	<i>išanšanən</i>	-	-	-	-	(N1p277)
date rachilla (stalk to which dates are attached)	<i>azra</i>	<i>azrur</i> “grappe”	<i>azrir</i> “fibre de la tige du palmier”	-	-	
>	<i>izranən</i>	<i>izrurn</i> [1]	<i>izrirən</i> [1]	-	-	(N9p137)
finger nail	<i>iška</i>	<i>iskər</i>	<i>iššər</i>	<i>išša</i>	<i>əškär</i>	
>	<i>iškanən</i>	<i>askarn</i> [4]	<i>aššarən</i> [4]	<i>iššan</i> [4]	<i>əškärän</i>	(N1p250, N5p89) Usually takes <i>-yu</i>

A number of words of this class are of unclear etymology, eg:

awiri > *iwiranən* “hut”
ayəmb^{wi} > *iḡəmb^wanən/iḡūḡḡ^wan* “hip-bone (crête)” (N1p109, N6p85, N8p130)
aṣankri > *iṣankranən* “skink” (probably from something like *asmrkal* (Boogert 1998:102), but final *-i* unexplained)
tsik^wats > *tsikk^wanən* “palm-fibre shopping bag (*quffa*)” (N8p133) (many speakers prefer *-yu*)

2.3.2.2.1.4 In *(ts)i-....-wan[ən]* / *(ts)i-....-yan[ən]*

Some speakers have variants with semivowels for certain words ending in *-a*: *(ts)i-....-wan[ən]* / *(ts)i-....-yan[ən]*. One might assume this to be a retention, but in fact the words in question (none with Zenaga cognates found) often historically ended with *r*:

Table 30.

	Kwarandz yey	Middle Atlas	Figuig	Taznatit	Notes
threshing- floor	<i>aṇaṇa</i>	<i>anrar</i> / <i>arrar</i>	<i>anṛar</i>	<i>annal</i> “petite piece dans laquelle on entrepose le bois et l'herbe pour les animaux”	
>	<i>iṇaṇayən</i>	<i>inurar</i> [2] / <i>irrarn</i> [1]	<i>inurar</i> [2]	-	(N6p103,125)
*fast- breaking	<i>afədda</i>	(<i>ləfdur</i>)	<i>afdar</i>	-	only in idiom <i>ləmʕəlləm n afədda</i> teacher GEN <i>afədda</i> , the Taleb's sheep which was the first butchered on Eid. Ultimately < Ar. <i>fīr</i> .
>	<i>ifəddawən</i> (If.) / <i>ifəddanən</i> (Kw.)	(<i>id ləfdur</i>) [11]	-	-	means: second day of Eid, when the sheep carcasses are cut up (N6p81, N6p117)
basket sp. w/ conical cover	<i>tsadara</i> / <i>tsadaṛa</i>	-	-	-	Used in Touat Arabic: <i>tadaṛa</i>
>	<i>tsidaṛayən</i> /	-	-	-	Especially: name of mountain SE

	<i>tsidəɾənən</i>				of Yami
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2.3.2.2.1.5 In *(t)i-...-ən* alone

There are two attested plurals in *(t)i-...-ən* with no vowel appearing in the last syllable of the stem:

aštūq > *ištqūn* “cheek” (N1p109, N8p90 – also *ištuqən*) – cp. Igli⁴ *šduq* < Arabic *šidq*- “flesh of the inner cheek”

tasəmts > *tismən* “sandal” - cp. Figuig *tisumma* “vieux sandales” (no sg. attested)

They appear to be irregular survivals of Plural 1, although external cognates suggest that this is unetymological.

2.3.2.2.1.6 Irregular cases

There is one unique case of a Berber-like plural without a *(ts)i-* prefix, on an etymologically Songhay word which can reasonably be classed as core vocabulary:

kankəm > *kankman* “breast” (< Songhay; cp. Tagdal/Tabarog/Tasawaq *kaŋkam* (Rueck & Niels Christiansen 1999), southern Songhay *kaŋkam*: DC “suckle, squeeze”, KS “squeeze”)

This could be seen as a Berber plural, or even (implausibly) as an Arabic plural based on forms like *lkas* “cup” > *lkisan*. However, Eastern Songhay and Tadaksahak-Tagdal both have (indefinite) plural endings of the form **yan*, corresponding to Western and Kwarandzyey-Tasawaq **yo*. It is possible that *kankman* represents an isolated survival of this plural ending in Kwarandzyey.

In one case, an Arabic singular appears to take a Berber plural:

ləfqira “Sufi woman” > *tsifqirən* “Sufi women” (N1p93, N7p83) (MA *tafəqqirt* > *tifəqqirin* “vielle, vieille et pauvre femme, mère”)

But here the plural seems to refer primarily to the local institution of regular women's

4 <http://siratigli.yoo7.com/montada-f12/topic-t281.htm>

meetings to recite *madīh*, giving it a certain semantic independence from the “singular”.

2.3.2.2.2 Arabic plurals

A number of Arabic words have also retained their plurals. Thus, for example (the Maghrebi Arabic forms are in every case identical, sometimes apart from the article):

Table 31.

Cl. CiCāC > M. Ar. CCal (1):

lkūrṭ > *lakʷraṭ* “rock” (N1p151)

CuCūC, CuCuC > CCuC (1):

(*l*)*ḥānk* > (*la*)*ḥnuk* “elongated hexagonal piece of wood in a pulley” (N1p161, N8p68)

laktab > *laktub* “book” (N1p101)

lqarʿa > *lqruʿ* “bottle”

CīCān > CiCan (1*):

lkas > *lkisan* “cup” (N1p198)

CaCāCiC > CCaCəC (3):

lməʃəl > *ləmfaʃəl* “joint” (N5p89)

CaCāCīC > CCaCiC (3):

lḥanut > *laḥwanit* “shop” (N9p125)

lqadus > *ləqwadis* “pipe” (N9p137)

CaCā'iC > CCayəC/CCawəC (4):

tsmag > *tsmawəg* “sock” (N8p100) – but more often heard with *-yu*

CawāCiC > CwaCəC (4):

qaləb > *qwaləb* “elongated hexagonal piece of wood in a pulley” (N1p261)

lbarda > *ləbbwarəd* “gardens not needing irrigation (located close to the erg)”

But whereas the Berber plurals have been profoundly restructured, the Arabic ones are all of precisely the same forms as in regional Arabic; a morphological analysis here would merely duplicate existing sources on Maghrebi Arabic, such as Heath (1987). Given the current situation of near-universal bilingualism, such plurals seem likely to reflect knowledge of Arabic as well as, or even instead of, knowledge of Kwarandzyey – although in rare cases, such as *tsmag* “sock”, a word found in Prémare (1993) but at present known to very few Arabic speakers in the area, this may not necessarily apply. No cases of an Arabic plural type being applied to a Songhay word have been observed.

Additionally, the Arabic dual remains in use for a handful of measure terms, as discussed in more detail under Numbers.

2.3.2.2.3 Borrowed nouns with no lexical plurals

Many borrowed nouns, Berber and Arabic, have no lexical plural, taking *yu* just like Songhay nouns. Cases of inter-speaker variation have been mentioned above, but for many nouns I have no record of any speakers accepting a head-internal plural:

aḥakkūz, -*yu* “staff” (N1p107) (Figuig *lḥakkʷaz*, pl. *iḥakkʷazən* < Ar. *ḥukkāz*-)
amayəg, -*yu* “farming tool with two-pronged end” (N6p15) (Kabyle *amayəg* > *imuyag* “un des côtés du fer d'une pioche, d'une hache”)
aḍbir, -*yu* “big drum” (N1p105) (ultimately < Ar. *ṭabl*-)
tsyarzūz, -*yu* “rabbit” (N1p205, N10p35) (Figuig *tayərzišš* > *tiyərzaž*)
tsəksi, -*yu* “ewe” (N10p35) (Zenaga *təkših*, pl. *tākšən*)
tsazgəwts, -*yu* “big bag made from palm” (N8p107) (Figuig *tazgawt* > *tizgawin*)
tsabaḍuḍ, -*yu* “flute” (N1p268) (cp. MA *abuḍa* “espèce de roseau”)

lḥaz, -*yu* “amulet” (N6p93, 2008-01-19/07) (< Arabic *al-ḥarz*-)
ləqšəyba, -*yu* “(traditional) trap” (2008-01-19/08) (MA *qšəyb-a* “little stick”)

In a significant minority of cases, it is the original plural, rather than the singular, that has been adopted as the sole form:

iknawən “twin/s” (N1p126) (Kabyle *ikən* > *akniwən*)
ts(iy)yagən “charcoal, embers” (N1p83) (Zenaga *turuḡd* > *turgun* / *turgən*)
sidawən “sheep sp. said to come from the south” (2007-12-21/31) (Taznatit *asidaw* > *isidawən* “le mouton à cornes et sans laine de Soudan”)
lahbūb “grain” (N7p99) (Cl. Ar. *al-ḥubūb*- “grains”)

Occasionally, the etymologically plural form may even have a singular feminine suffix added to it, producing a sort of hybrid form:

tsiskənt “piece of dung” (Taznatit *tiskət* > *tiskin* “crotte, fiente”)

2.3.2.3 Inherited -*yu* and its distribution

How has contact, and in particular large-scale borrowing of nominal plurals, impacted

the distribution of the NP plural clitic =*yu*?

For the majority of nouns without a lexical plural, =*yu* appears at the end of the “core NP”: the basic order is N Adj Dem=*yu*, followed by relative clauses (see Demonstratives), eg:

2.70 *dzyəy=f^w kədda=yu*
 word=one little=PL
 a few words (2007-11-15/5)

2.71 *bə bya=ɣ=yu*
 person big=DEM=PL
 these old men (2007-12-22/11)

2.72 *əgga ʕa-b-sku-ndza tsyarəz=yu*
 PAST 1S-IMPF-be caught=CAUS hare=PL
 I used to catch hares (2007-12-06/AM)

=*yu* is compatible with =*fu* “one”, interpreted as a specific indefinite marker:

2.73 *ʕa-nnən-dz igǔmmwann=f=yu*
 1S-drink-CAUS seedbed.PL=one=PL
 I irrigated some seedbeds. (2008-01-03/06)

However, as in other Songhay languages, eg Koyra Chiini, it does not otherwise appear when a numeral is the last element of the core NP (see Numerals):

2.74 *tsə inza*
 brotherthree
 three brothers (2008-01-30/10)

But it reappears if a demonstrative or adjective follows the noun+numeral (elsewhere in

Songhay, numbers follow adjectives anyway):

2.75 *aḍṛa inza bya=γ=yu*
 mountain three big=DEM=PL
 these three big mountains

2.76 *ya-b-dzam-ana ʃaʃriyyam=γ=yu*
 1P-IMPF-do-3S ten days=DEM=PL
 We do it for these ten days. (2008-01-19/04)

If more than one adjective is present – a textually rare phenomenon studied mainly through elicitation – it may appear on both adjectives:

2.77 *ʃa-ggwa yu bya=yu bibəy=yu*
 1S-see camel big=PL black=PL
 We saw big black camels. (N6p116)

or, as in southern Songhay, only on the last:

2.78 *uγ=kədda yəqsəh=yu*
 ABS=small tough=PL
 little tough guys (N6p135)

When the noun has a lexical plural and is not followed by an adjective or demonstrative/relative, =*yu* is absent:

2.79 *əgga izūnk^wəḍən ba-ʃarṛəm*
 PAST gazelles.PL PF-plentiful
 Gazelles used to be common. (2007-12-30/17)

2.80 *lkisan bə ʃan mu=ka*
 cup.PLEXIST 1S.GEN front=LOC

The cups are in front of me. (2008-01-03/06)

However, it again reappears if such a modifier follows the noun:

2.81 *a-ba* *igadanən=γ=yu*
 3S-EXIST wall.PL=DEM=PL
 There are these walls... (2007-12-22/11)

2.82 *lhwayaj* *fts=yu kull* *a-b-tsku-ndza* *a-b-anya* *ya*
 thing.PL bad=PL all 3S-IMPF-be caught-CAUS 3S-IMPF-eat right
 All bad things it catches and eats. (2008-01-01/08)

2.83 *šškayər=dz=yu,* *i-b-lləxs-ana*
 bag.PL=ANA=PL 3P-IMPF-wet-3S
 These bags, they wet them. (2008-02-05)

2.84 *ʔbasa=f^w* *bbya-həyn=yu*
 plate.PL=one big-size=PL
 some huge plates (2008-02-05)

as already evidenced in Cancel (1908):

izzadhen *kedda iou*
 roosters small pl
 “petits coqs”
 male chicks (Ca328)

The resulting rule may be summed up as: =*yu* is added to the last element(s) of the core NP if and only if the last element of the core NP is not already inherently marked for plurality. This might seem like a large change – but in fact southern Songhay already has a tiny minority of inherently plural nouns, specifically numbers with the *a/i-* prefix

and personal pronouns, and these behave rather similarly. Thus in Koyra Chiini:

<i>a-guu</i>	<i>kaa;</i>	<i>a-guu</i>	<i>di</i>	<i>yo</i>	<i>kaa</i>
Abs-five	come;	Abs-five	Def	Pl	come
Five came; The five came. (Heath 1999a:88)					

<i>yer;</i>	<i>yer</i>	<i>woo</i>	<i>yo</i>
we;	we	this	pl
we; we here (Heath 1999a:100)			

In most eastern Songhay languages, the definite plural marker *-ey* already appears independently on the demonstrative and on the noun/adjective preceding it:

<i>hug-ey</i>	<i>w-ey</i>	<i>ra</i>
house=DefPl	Dem-Pl	Loc
in these houses (Heath 1999b:130)		

Cases like this, rare though they are, provide a natural model for bilingual speakers seeking a way to cope with code-switched plurals. The phenomenon of double marking of plurality in cases where the matrix language marks it in a different position than the embedded language is well-attested in code-switching, notably between English and Bantu languages; in fact, in Shona it was found to occur with a majority of code-switched nouns, but only 17% of borrowings (Myers-Scotton 1993:132). Kwarandzyey's requirement of it as a grammatical rule is thus a rather plausible example of the grammaticalisation within a single language of what was originally an artefact of codeswitching between two languages.

2.4 Definiteness

Arabic differs from all documented Berber languages in explicitly marking definiteness, not only on the noun but also on any adjectives modifying it. Definiteness marking is widespread but heterogenous and probably not reconstructible in Songhay; Eastern

Songhay has explicit definite clitics following the adjective position, while Western Songhay uses the former anaphoric article *di* as a definite article. Both Siwi and Kwarandzyey stand somewhat apart from the rest of their families – Siwi in marking definiteness, Kwarandzyey in not doing so – but whether external influence is responsible for this situation is questionable. The nature of definiteness marking is also highly relevant to the form taken by Arabic loanwords.

2.4.1 Siwi

2.4.1.1 Reflexes of the Arabic article

The Arabic definiteness marker is routinely borrowed into Siwi, but only as a fossilised prefix, not as a productive element. The Classical Arabic article has two allomorphs: *al-* before non-coronals and *aC-* (with gemination of the following consonant) before coronals. In Siwi, the former becomes *l-* (with schwa-insertion determined by the syllabic structure) and the latter *C-*, and the resulting borrowed allomorphy has become productive in the morphology of adjectival nouns (see Adjectives). Thus, for example (repeated from Plurals above):

Table 32.

Non-coronal (“lunar”):

- lǝfhǝl* “irrigation canal sp.” (Cl. Ar. *faħl-*)
- lǝǝrǝš* “long wooden bar on a wagon” (Cl. Ar. *ǝarš-*)
- lǝqlǝm* “pen” (Cl. Ar. *qalam-*)
- lbuma* “owl” (Cl. Ar. *būm-at-*)

Coronal (“solar”):

- ssqar* “hawk” (Cl. Ar. *šaqr-*)
- zzmar* “flute” (MSAr. *zamr-*)
- ǝǝmʷǝl* “sand” (Cl. Ar. *raml-*)
- ddhan* “oil” (Cl. Ar. *duhn-*)

j is often treated as a coronal, unlike Classical Arabic. This conforms to its modern pronunciation: whereas Classical *j* was a palatal stop [j], Siwi *j* is [dž] ~ [ž]. It also agrees with both Eastern Libyan Arabic (Owens 1984:47) and Cairene Arabic (Gary & Gamal-Eldin 1982:127), where the reflex of *j* is assimilated to the article. Thus eg:

əjjwab “letter” (2009-10-13) (Cl. Ar. *jawāb*- “reply”)

əjjbən “cheese” (2009-06-19.a) (Cl. Ar. *jubn*-)

On the other hand, in some loans – by this very token probably older ones – it is treated as non-coronal:

əljmət “Friday” (2008-04-27/224) (Cl. Ar. *jumuʿ-at*-; note irregular loss of ʃ)

m, with less phonetic justification and contrary to both Eastern Libyan and Cairene Arabic, displays a similar variation between the two allomorphs of the article:

Table 33.

mmaħbəs “ring” (N1p155, 2009-06-27) (Eg. Ar. *maħbas* “clasp, clip (of a necklace, bracelet, etc.)”)

mməyrəb “Maghrib prayer, dusk” (N2p9) (Cl. Ar. *maʿrib*-)

mməsʕuda “female donkey” (N1p159) (Cl. Ar. *masʕūd*- “happy”, by euphemism)

vs:

lmügbʷas “tweezers” (N3p117) (instrumental noun from root *qbš* “take with the ends of one's fingers”)

lmaşurət “iron pipe” (N2p57) (Eg. Ar. *masūr-a*, probably < Persian)

Vycichl (2005:194) tentatively suggested that the *əm*- allomorph represents a Yemeni dialectal feature.

Another important class of exceptions to the normal assimilation rule, the *ləCCuC* plurals, have been discussed above.

In general, Arabic nouns borrowed into Siwi either retain the article or gain a Berber gender/number circumfix; it is much rarer for them to be borrowed as bare stems (but occasional cases are attested, eg *gəlluni* “plastic water container” above.) In the rare cases where the Berber circumfix is added to the article (eg *albab* “door” above, pl. *lbiban*; *ənnbaq* “lote-fruit” > *t-ənnbaq-t* “lote tree”), the Arabic article can be interpreted as synchronically part of the stem. Predictably enough, the Arabic article is never found on the outside of an already present Berber circumfix.

2.4.1.2 Siwi definiteness marking

The Arabic definite article, though copiously borrowed into Siwi, has no meaning in Siwi beyond serving as an alternative indicator of noun-hood alongside the Berber nominal prefixes. However, Siwi turns out to have a definiteness marking system of its own based on stress, with no reported parallels elsewhere in Berber and no direct Arabic parallels. In general, ultimate stress marks the indefinite, penultimate the definite. Pronominal genitives always have penultimate stress. In number-noun combinations, the noun receives penultimate stress while the number is stressed according to its definiteness. Because, as will become clear, this is unlikely to have anything to do with Arabic influence, I will not treat this system exhaustively here (there are undoubtedly other issues in stress assignment to consider); a simple way to exemplify it is by contrasts such as the following, from the start of a narrative (2008-08-03/246), where the same noun with the same referent appears in turn first as indefinite (underlined), when being introduced as a discourse participant, and then as definite (bold), referring to an already mentioned participant:

- 2.85 *y-umṡ^w-ás* *i* *abbá-nnəs:* “*uy^w-á* *niš* *rǰi-x*
ləmnám *anni*
 3M-say-3SDatto father-3SGen lo-PROX I dream-1S
 dream that...

He told his father: “Lo, I have dreamt a dream that [12 stars and the sun and moon bowed down to me]”

abbá-nnəs *y-úmm^wa-s:* “*a wáldi,* *lá xəbbaṛ-ásən*
 father=3SGen 3S-say-3SDat my son, NEG tell.INT-3PDat

ləmnám *wənn* *ərǰi-t* *dá-w-ok* *y ítma-k*”
 dream REL dream-2S+3SObj MOD-Dem.M-2:M to brothers-2S
 “My son, do not tell your brothers **the dream** which you have dreamed.”

...

- 2.86 *yə-šší-n* *dád-sən* *akbər nammá* *ləqmís...*

3-take-PL with-3PL robe or shirt...

They took with them a robe, or [rather] a shirt...

i-lággən-ən lóqmiš s idámmən.

3-wet-PL shirt INST blood

They wet **the shirt** with blood.

...

2.87 *ijjən gád-sən y-umm^{wá}-sən: díy anú...*

one in-3P 3S-say-3PDat EXIST well

One of them told them: there's a well!

yə-ħħ-ən y ánu

3-go-PL to well

They went to **the well**.

This system is productive even with names, which, being intrinsically definite, in Siwi typically receive penultimate stress irrespective of the stress of their Arabic counterparts: thus *yáŕqub* “Jacob” (Arabic *yaŕqúb-*) (2008-08-03/246), *máħmud* “Mahmoud” (Ar. *maħmúd-*) (2008-04-17/190), and even *lámin* “Lameen” (Ar. *al-'amín-*) (2009-06-17). Occasionally the original stress pattern is preserved, eg *bənyamín* “Benjamin” (2008-08-03/246).

Which of these stress patterns is to be regarded as unmarked? A plausible answer may be found by looking at the verbal system. There, in bisyllabic stems without suffixes, stress is penultimate: eg *n-xáddəm* “we work” (2008-04-27/224), *ga-t-sábbəl* “she will put blame” (2008-08-03/247), *i-sáxar* “he plays” (2008-08-03/246). In isolation this could be interpreted as stem-initial stress, as suggested by Louali and Philippon (2004), since no attested verb stem in Siwi is longer than disyllabic; but in fact, while it always appears possible to place stress on the stem, in verb complexes with suffixes it is also common to place stress on the penultimate, suggesting that it is position relative to the

end rather than the beginning that matters: *ge-y-nfu-yánax* “he will benefit us” (2008-08-03/246), *mm^wi-γ-asín-a* “I have told them” (2009-06-23/a).

The same is probably true diachronically: the most plausible explanation for a stress alternation like this would be that the ultimate stress forms (indefinites) were originally marked by a vocalic suffix. This would exactly parallel Ossetian, as described by Thordarson (2009). There, stress can only fall on either the 1st or 2nd syllable, and the proclitic definite article *i-*, preserved in the Digor dialect, thus moves the stress of NP-initial words stressed on the 2nd syllable to the 1st syllable. In the Iron dialect, the proclitic has been lost, but the stress shift continues to apply, becoming the sole overt marker of definiteness.

For the hypothesised indefinite suffix to have been deleted by a regular process, we would need a rule deleting certain word-final vowels (at least.) Siwi, and indeed all modern Berber languages, do not allow short/lax vowels word-finally, and do allow all other segments; a rule deleting final short/lax vowels would explain this phenomenon, and only such a rule would not leave us with the problem of accounting for the acceptability of all final segments other than short/lax vowels. But since this sound change applies to all Berber languages, such a rule would need to have applied quite early, making Arabic influence implausible despite the fact that this category coincides with one also used in Arabic.

The fact that the definite is the unmarked form in Siwi explains why Arabic nouns typically enter the language with the definite article. In all regional Arabic dialects, reflexes of *al-* mark the definite and the indefinite is unmarked, so one would otherwise expect the indefinite forms of the nouns to enter the language. On the other hand, Arabic nouns appear to retain the article rather often in entering other languages; other cases where this appears to be typical include all Berber languages, early Spanish, and Songhay (see below), though not, for example, Turkish or Persian. Whether a similar explanation can be carried over to those cases is a matter for future research.

2.4.2 Kwarandzyey

2.4.2.1 Reflexes of the Arabic article

In general, the Arabic definiteness marker is borrowed into Kwarandzyey only as a fossilised prefix, not as a productive element. Numerous examples have already been seen above.

Some Arabic loanwords appear both with and without the definite article, particularly in the speech of younger speakers, eg:

- 2.88 *yə-ddzüm lbəşşər. yə-ddzüm bəşşər ndza lkuřžit.*
 1P-plant onion. 1P-plant onion and courgette
 We planted onions. We planted onions and courgettes. (2008-02-05) (< Ar. *bařal-*)

- 2.89 *purřabl bə řřabla=dzi*
 mobile EXIST table=ANA
 There's a mobile on the table. (N6p104) (< Fr. *portable* via Ar.)

- 2.90 *řa-kks řan lpurřabl gə=tsa*
 1S-leave 1S.GEN mobile home=LOC
 I left my mobile at home. (N6p104)

But, as the first example illustrates nicely, the variation cannot in general be accounted for as definiteness marking (in Arabic, both sentences in the first example would require the definite article.) There are also nouns where an Arabic article is in apparently free (probably sociolinguistically conditioned) variation with a Berber circumfix, eg *tsaqřəybəts ~ ləqřəyba* “traditional trap”.

2.4.2.2 Kwarandzyey definiteness marking

Definite nouns, like non-specific indefinites, are left unmarked (see Demonstratives for

the anaphoric marker, Numbers and quantifiers for the specific indefinite marker), eg:

2.91 *yaʕni ya-aʕam-dər timəzɡida*

ie 1P-FUT-go mosque

That means we're going to the mosque (2007-11-15/05)

The absence of a definite marker is shared with Berber, but is probably inherited from at least Proto-Northern Songhay. Tadakсахak *ayo*, presumably cognate to the Kwarandzyey demonstrative, is not a definite marker but an emphatic determiner marking topics or other salient elements (Christiansen-Bolli 2010:154), and definites without it are frequent:

<i>Aywa</i>	<i>t-a-nəfus-t</i>	<i>a-bbén</i>
resume	f-sg-story-f:sg	3s=be.finished

Well, the story is finished.

<i>ceed(i) á=f-keeni</i>	<i>gánda</i>	<i>ka</i>
spoon 3s=imperf-lie	earth	loc

The/a spoon lies on the ground.

Tasawaq appears even closer to the Kwarandzyey situation: there, no definite marker is reported, and definites and non-specific indefinites appear to remain unmarked:

<i>wàʔ</i>	<i>káyna</i>	<i>btí-sí</i>	<i>húgù</i>	<i>kúná</i>
woman	little	FUT-NEG.EXIST	house	inside

“la petite femme ne sera pas dans la maison”

The little woman will not be in the house. (Alidou 1988:60)

Western Songhay gives no evidence for a proto-Songhay definite marker; its definite article *di* has transparently developed from the anaphoric demonstrative found elsewhere throughout Songhay. But Eastern Songhay (excluding Benin Dendi) consistently shows a clitic definite article *-o* pl. *-ey*. If this is an archaic feature, it

would suggest that northern Songhay's lack of the article might result from Berber influence. But there seems to be no conclusive evidence for this; in fact, the demonstrative *woo*, Eastern Songhay pl. *w-ey*, appears an obvious potential source for the definite article, via a familiar grammaticalisation path (Greenberg 1978). In the absence of such evidence, it is probable that the similarity between the Berber and Songhay situations is ancient, rather than being the result of recent contact.

Note that both the definite and the non-specific indefinite are unmarked in Kwarandzyey, whereas only the non-specific indefinite is unmarked in Maghrebi Arabic. For older borrowings via Berber, the definite article is expected in any case; but for borrowings direct from Arabic, this would lead us to expect that forms with and without *al-* would both be plausible candidates to be borrowed, although the higher frequency of definites might lead them to be borrowed more often. As seen above, this appears to be the case.

2.5 Case marking

Songhay does not distinguish nominative vs. accusative case; primary postpositions, in Kwarandzyey and elsewhere in Songhay, could potentially be interpreted as case markers, but these are dealt with under Adpositions. Classical Arabic retained three cases from proto-Semitic, but these have been lost in every known surviving dialect, and grammarians' comments make it clear that they had disappeared from everyday speech in the towns from a very early period; there is no realistic chance of either Siwi or Kwarandzyey having been influenced by a dialect of Arabic with case. In Berber, on the other hand, the situation is more interesting. There, most varieties distinguish two “states” of the noun for nouns with the Berber prefixes: the “bound state” (*état d'annexion*), a form used for objects of most prepositions and for subjects when (and only when) they directly follow the verb, and the “absolute state” (*état libre/absolu*), used everywhere else and serving as the citation form. Thus in Kabyle (Chaker 1988):

<i>yə-nyə</i>	<i>wə-rgaz...</i>
3MSg-kill	B -man

The man killed...

yə-nɣa *a-rgaz.*

3MSg-kill A-man

He killed the man.

i *wə-rgaz*

to B-man

to the man⁵

This case marking system – sg. m. *a-* / f. *ta-* for direct objects and citation forms, m. *wə-* / f. *tə-* for subjects and prepositional objects, to pick the commonest allomorphs – shows similarities to Semitic and Cushitic, and shares with the latter the typologically unusual property of being marked-nominative; if the case system is a shared Afroasiatic inheritance, as Sasse (1984) suggests, then it must *a fortiori* date back to proto-Berber.

Kwarandzyey displays what at first sight looks like remarkably like Berber “state” marking at the other end of the noun phrase. The plural marker =*yu* is replaced with =*i*= (postvocally =*y*=) in the following circumstances:

- on a subject directly adjacent to a verb and not topicalised (irrespective of the presence or absence of agreement markers):

2.92 *igədanən=ɣ=i-ba-ffəg* *dzəw n tsir=ka*
 walls=DEM=3P-PF-bury earth GEN under=LOC
 These walls are buried under the earth (2007-12-22/12)

- directly preceding a postposition or genitive marker:

2.93 *gung^wa=yu:* *yə-m-dər* *gung^wa=y=ši*
 chicken=PL 1P-IRR-go chicken=PL=DAT

⁵ <http://www.imyura.net/Timenza/tabid/57/articleType/ArticleView/articleId/505/Rumpelstilzchen-s-teqbaylit-Arezqi-n-Sedi.aspx>

Chickens: we'll go on to chickens. (2007-12-21/31)

- 2.94 *tsirzuz=i=n* *rrbaɣats*
 hare=PL=GEN herd
 a herd of rabbits (2007-12-30/17)

However, the striking similarity is reduced when this phenomenon is considered in a broader perspective. The deletion of final *-i/-u* intonation-phrase-internally is a widespread phenomenon in Kwarandzyey. For nominals, excluding monosyllabic nouns, adjectives formed with the suffix *-u(w)*, and words which end or historically ended in a semivowel, it applies consistently in the contexts listed above, but also in other contexts: before adjectives or numbers; before the plural marker; and before demonstratives. For verbs, more investigation is required; it appears to be optional in a number of circumstances, but obligatory at least before pronoun+postposition units and causative/centrifugal suffixes. In short, final *-i/-u* deletion seems to be obligatory when syntactically closely bound items occur adjacent to one another in general. While the Berber state marking system too seems to involve marking of syntactically closely bound items adjacent to one another, it is substantially more restricted; looking at the plural clitic in isolation gives a misleadingly great impression of similarity, as a side effect of the coincidental fact that the Kwarandzyey plural ending and the Berber state prefix occur in rather similar syntactic environments. Independent parallel development appears to be the most likely explanation.

As for Siwi, it has no case (or “state”) marking. Has it lost it under Arabic influence? The obvious answer, “yes”, is plausible, but some potential complications must be considered. Siwi is not alone in Berber in lacking the “state” distinction. At present it appears that almost no Berber language of Libya nor Egypt retains it: Sened, Nafusi, Ghadames, Sokna/El-Fogaha, Awjila, and Siwa all display the same form irrespective of syntactic position, as already noted by Laoust (1931:97). Moreover, just west of the caseless varieties are others where case marking appears to have receded: Zuara (near the Tunisian border) and Ouargla (eastern Algerian Sahara) retain reflexes of the *état d'annexion* after certain prepositions (Mitchell 1953; Biarnay 1908:172, 193) but not for

postverbal subjects, yielding contrasts such as Zuaran *yəfɾəh argázis* “Her husband [unmarked] was happy” vs. *nwárgaz ismis s(ə)fid* “belong to [lit. of] a man [annexed] called Saʕid” (Mitchell 2009:198), and Ouargla *d ouberchi* “with the clod [annexed]” and *inna ias aberchi* “the clod [unmarked] told him...” (Biarnay 1908:230) – unlike the closely related Tumzabt, which keeps the usual Berber system (Brahim Abdessalam & Bekir Abdessalam 1996). This might suggest that the partial or full loss of case was an early development in eastern Berber, and hence perhaps predated Arabic. But all of these languages are of course under heavy Arabic influence, and in fact we have direct evidence for some of them that this is a recent development: Lanfry points out fossilised instances of “state” marking, in some Ghadames songs and in medieval Nafusi (Lanfry 1972:181-2; Lewicki 1934), so its loss in these languages demonstrably postdates the beginning of Arabic's domination. Moreover, both cases include postverbal subjects, making it unlikely that the loss of subject marking in Zuaran and Ouargla reflects an innovation prior to the split of eastern Berber. This suggests that the loss of case marking, rather than being an early property of eastern Berber, has happened separately in different areas, including Siwa, under Arabic influence. A probable factor is the entry of large numbers of Arabic nouns retaining the Arabic definite article, since these are not reported to take “state” marking in any Berber variety; this would lead the already rather minimal functional load of case marking to be reduced.

Traces of earlier case marking in Siwi would further strengthen this hypothesis. No clear-cut examples have as yet been noted in Siwi, but one suggestive phenomenon appears: the prefix *təmm-* on names of some wells, eg *təmmazzid*, *təmməksal* (N2p216). The change *nw > mm* is attested in Siwi, notably for the verb “to say” (2m. *mm^{wi}-t*, cp. Medieval Nafusi *ta-nwī-t* (Lewicki 1934:304)), so one might propose that these derive from a shortened version of *tətt n* “well of”, plus the masculine construct state: **tətt n wazzid*, **tətt n wəksal*. In the absence of any Siwi attestations of **azzid*, **aksal*, this is problematic; **aksal* would be the expected infinitive of the verb **ksal*, attested in Ghadames (Lanfry 1973) and Ahaggar Tuareg (Foucauld 1951) with the meaning of “gather (scattered objects, from a surface into a container)”, but this is scarcely compelling. On the other hand, there is possible evidence for relating the *mm* to genitive *n*: the place names *təllaḥram*, *tərrəbiʕ* (N1p243), *təmmusi* (N2p25) fit the same

pattern if interpreted as **tətt n lahram* “well of the forbidden/wrong”, **tətt n rrbis* “well of the spring/vegetation”, **tətt n musi* “well of Musa”, with application of the still productive assimilation rule $n+l/r/m > ll/r/m$.

2.6 Conclusions

In this contact situation, morphemes expressing NP features appear to be first borrowed as parts of specific words; in both languages, most of them continue to be restricted to words to which they are etymologically appropriate. In effect, they are initially confined to frozen Embedded Language islands, and then recreated – or not – by reanalysis, potentially carried out by monolingual speakers. While this suggests that free morphemes should be more easily borrowed than bound ones, it also suggests that the borrowing of bound morphemes is limited not by whether they are segmental or templatic – as might have been expected – but by their frequency and analysability; indeed, the marginal productivity of borrowed templatic plural morphemes in both Kwarandzyey and Siwi demonstrates once again that these are borrowable.

The nature of borrowed morphemes' functions, and their congruence with the existing system, then plays a large role in determining whether or not they are interpretable as having a function in the host language. Morphemes expressing semantically relevant features like number, sex, or person are readily interpretable as having a function, and hence more easily become productive. Ones expressing tracking functions, such as definiteness, or gender for inanimate referents, have a function in the host language only if it already has a congruent tracking system, or if (implausibly) it borrows sufficiently many NP islands; little motivation exists for making them productive. In Myers-Scotton's (2002) terminology (see ch. 6), content morphemes and early system morphemes enter more readily than late system morphemes; the same is observed in code-switching. Such a pattern is inherently not applicable to calques, which play a significant role in the influence observed but primarily affect paradigms rather than forms.

3 Adjectives

Many languages have one or more word classes definable on morphosyntactic grounds whose members normally express properties of the referent of a noun phrase, rather than referring themselves or expressing events. Members of such a class are termed adjectives. According to Stassen (1997:30), no language has a predicate encoding strategy specific to adjectives; instead, adjectives use the same encoding strategies for predication as either intransitive verbs, nouns, or more rarely locationals. Depending on which predication construction an adjective uses, I will term it a verbal adjective or a nominal adjective. Some languages, such as Japanese, use both verbal and nominal adjectives; others have only one or the other.

In each of Siwi, Kwarandzyey, and Arabic, at least one morphosyntactically defined class of adjectives exists; the syntactic and morphological properties of these classes vary significantly between the different languages. As will be seen below, the inherited differences between the adjectival word classes available in Songhay and Berber, and in the form of adjectives, have both had a substantial effect on the adaptation of loans from Arabic into these languages.

The bounds of adjectival classes, here and in general, vary in ways that make them potentially inconvenient for cross-linguistic comparison; often an adjective in one language corresponds to a verb or a noun in another one. The intuition that cross-linguistic comparability could be achieved by comparing different strategies for expressing properties is hard to justify, since the observed differences in strategies can themselves often be thought of as reflecting differences in what counts as a “property”; many properties can be viewed as the results of events (eg *painted*), or can be reified as entities of which their referent may be an example (eg *male*) on the other. Since my main interest here is in contact influence, I will focus primarily on loans which are members of an adjective class in the recipient language, while also discussing (when relevant) concepts expressed through an adjective in the donor language but not in the recipient language. I will not discuss properties (for example, *painful*) which are expressed non-adjectivally in all languages involved in the contact, irrespective of

whether they are expressed adjectivally in other languages such as English.

Three key dimensions of variation relevant here are adjective word class (nominal vs. verbal), agreement inflection, and comparison, all of which can be affected by contact. Comparative forms are known to have been borrowed in several languages, eg Brahui *-tir* from Baluchi (Andronov 2001:46), Tsat *pi''* from Mandarin *bǐ* (Thurgood & Li 2002:19), and numerous cases throughout the various Romani languages (Matras 2009b:14); in connection with Arabic, the systematic borrowing of suppletive Arabic comparatives is seen both in some eastern Berber varieties (as discussed below) and in Domari (Matras, *ibid.*), while the borrowing of an Arabic template for productive comparative formation is attested in Western Neo-Aramaic (Lipiński 1997:279) as well as Siwi (below.) The borrowing of adjectives together with their inflection may be less common, but is attested in Maltese (Fenech 1978:54) and some Berber languages (as seen below); the close congruence of Arabic, Berber, and Romance agreement systems, both based on two genders (masculine/feminine) and (at least in most sedentary varieties) two numbers (singular/plural), no doubt makes this easier. More surprising would be a borrowing of agreement inflection into a language with no such noun classes; Chamorro comes close to being an example, but there feminine endings on Spanish-origin adjectives are restricted to human referents with natural gender (Stolz 2003:278), making them more comparable to the productive borrowing of derivational markers of natural gender (see Nouns.) I am not aware of any cross-linguistic study of what happens when languages with verbal adjectives and ones with nominal adjectives influence one another. Field's (2002:41) Principle of System (In)Compatibility might be taken to predict that the word class of adjectives should remain constant irrespective of external influence:

“Any form or form-meaning set is borrowable from a donor language if it conforms to the morphological possibilities of the recipient language with regard to morphological structure... No form or form-meaning set is borrowable from a donor language if it does not conform to the morphological possibilities of the recipient language with regard to morpheme types.”

However, Japanese suggests otherwise, presenting an interesting contrast of a verbal adjective class, largely inherited, and a nominal adjective class consisting mainly of

Chinese loanwords. As will be seen below, within Kwarandzyey the incorporation of borrowed adjectives into a new word class reflecting their properties in the source language, as opposed to the existing adjective class, is quite atypical but solidly attested.

3.1 Background

3.1.1 Arabic

In Arabic, attributive and stative predicative adjectives are not formally distinguished, and predication (as with nouns) is handled by simple juxtaposition using the indefinite. Corresponding inchoative verbs exist using the same root consonants with a verbal template. Some adjective classes, such as passive participles, exist predicably for any transitive verb, and are thus best considered as deverbal. Others have forms which cannot be predicted from the corresponding inchoative verb, although the converse is true; in such cases, the verb is best viewed as derived from the adjective. The examples below illustrate the stability of this pattern across Classical and modern colloquial varieties of Arabic.

Arabic (Classical):	<i>walad-u-n</i> boy-NOM-INDEF a big boy	<i>kabīr-u-n</i> big-NOM-INDEF	(attribution - uses adjective)
	<i>al-walad-u</i> DEF-boy-NOM The boy is big.	<i>kabīr-u-n</i> big-NOM-INDEF	(stative predication - uses adjective)
Compare:	<i>ḏālika</i> that.M.SG That is a boy.	<i>walad-u-n</i> boy-NOM-INDEF	(nominal predication)
Contrast:	<i>kabur-a</i> get_big-3MSPf	<i>al-walad-u</i> the-boy-NOM	(inchoative predication - uses corresponding verb)

The boy got big.

Arabic (Algerian): *bnita kbir-a* (attribution)
 girl big-FSg
 a big house

əl-bnita kbir-a (stative predication)
 DEF-girl big-FSg
 The girl is big.

like *hadik bnita* (nominal predication)
 that.F.SG girl
 That is a girl.

əl-bnita kəbr-ət (inchoative predication)
 the-girl get big-3FSPf
 The girl got big.

əd-dar kbir-a (stative predication)
 DEF-house big-FSg
 The house is big.

like *hadik dar* (nominal predication)
 that.F.SG house
 That is a house.

əd-dar kəbr-ət
 the-house get big-3FSPf
 The house got big.

As illustrated by the difference of gender in these two example sets, adjectives and verbs in Arabic both agree in number and gender with their referent/subject; but

adjectives, unlike verbs, show no person agreement. Attributive adjectives in Arabic also agree in definiteness (and, in Classical Arabic, case) with their referent; predicative adjectives are always indefinite (and, in Classical, nominative.)

In Classical Arabic, adjectives agree in gender for human referents irrespective of number; in many though not all colloquial varieties, plural agreement consistently does not distinguish gender:

Algerian Arabic: *ən-nsa* *ṭwal*
 the-women tall.PL
 The women are tall.

ər-rjal *ṭwal*
 the-men tall.PL
 The men are tall.

In Classical, non-human referents take the feminine singular agreement forms in the plural:

al-buyūt-u *kabīr-at-u-n*
 the-houses-NOM big-FSg-NOM-INDEF
 The houses are big

Adjectives with the definite article can always be used as noun heads:

Arabic (Classical) *jā'-a* *al-kabīr-u*
 come.3MSgPf the-big-NOM
 The big one came.

In Classical Arabic, the same applies to indefinite adjectives. However, In Algerian Arabic, an indefinite adjective is not normally used as a noun head alone; instead, *waḥad* “one” is used as a head.

3.1.2 Berber

Typically in Berber, most properties that in Arabic would be expressed as adjectives are expressed exclusively by stative/inchoative verbs. With intensive aspect, such verbs express a stative meaning; with the aorist, they express an inchoative. Attributive forms use the “participle”, a form with a suffix *-ən* used for a verb whose subject is the pivot of a relative clause or is in focus, and productive for all verbs, not just for stative/inchoative ones. However, up to two distinct classes of adjectives, depending on the language, must be recognised.

In a number of languages, an adjectival subclass of verbs can be justified on morphological grounds. Berber verbs normally have three morphologically distinct aspectual forms in the positive: aorist (used for the imperative and future), intensive (used for imperfect aspect), and preterite (used for perfect aspect.) Several languages, such as Kabyle (Vincennes & Dallet 1960:23) and Tamasheq (Heath 2005a), have retained a subclass of stative/inchoative verbs whose preterite takes a special set of subject agreement affixes, different (except in the 1st person singular) from those used with all other verbs, and is stative in meaning. This is believed to be an archaic feature, cognate to the Semitic perfect conjugation (Diakonoff 1988:32). Whereas the 2nd person and 3rd person singular forms of the verb in Berber normally include prefixes, this conjugation is exclusively suffixal. Thus:

Kabyle: *kəčč* *məqq^wr-əd* *fəll-i*
 2Sg big-2SgSTAT on-1Sg
 You're bigger than me. (Vincennes & Dallet 1960:163)

vs. with the prefix: *amk* *ara* *t-xədm-əd?*
 how FOC.FUT 2Sg-work-2Sg?
 How will you work? (Vincennes & Dallet 1960:138)

Like any other verb, these cannot act as nominal heads; instead, the same construction is

used as for subject relatives, with a dummy head (usually demonstrative) and a so-called participle with suffixed *-n*, eg:

Tamashek: *a lăbas-ăn*
 DEM be.bad.Reslt-PtcplMSG
 something bad (Heath 2005a:640)

Most Berber languages (with the exception of Tuareg) have some nominal adjectives - properties expressed by exclusively stative forms marked, like nominals, for number and gender and not aspect or person, but capable of modifying a nominal head as well as of acting as a nominal head in their own right. These agree in number and gender with their referent, but not in case (or “state”, as it is often termed in Berber studies.) In many (perhaps most) cases, such adjectives have corresponding stative/inchoative verbs; however, there are adjectives with no corresponding verb, eg *lăždid* “new” (from Arabic) in Tashelhiyt (Aspinion 1953:199). When adjectives are used in predicative contexts (rather than corresponding verbs), they typically use the language's nominal predication construction, whatever that may be – verbal *g* in Tashelhiyt (Stumme 1899:49; Aspinion 1953:90); particle *d* in Ayt Seghrouchen (Bentolila 1981:246), Eastern Tarifit (Kossmann 2000:129), Figuig (Kossmann 1997:241), Kabyle (Vincennes & Dallet 1960:150); simple juxtaposition in Nafusi (Beguinot 1931:63, 118). Eg:

Tashelhiyt (Stumme 1899:49, 84, 132):

<i>ta-zru-t</i>	<i>ta-səggan-t</i>	(nominal adjective rather than participle)
FSg-stone-FSg	FSg-black-FSg	
a black rock		
<i>a-frux=ad</i>	<i>i-səggan</i>	(predication with stative verb)
MSg-child=DEM	3FSg-black.INT	
This boy is black.		

or: *a-frux=ad* *i-ga* *a-səggan* (predication with adjective)
 MSg-child=DEM 3MSg-be FSg-black
 This boy is black.

like: *t-gi-t* *a-məydar* (nominal predication)
 2Sg-be-2Sg MSg-traitor
 You are a traitor!

Nominal adjectives can be used as noun heads:

i-mmutr=i *u-bəršan*
 3MSg-see.PRET=3MSgDO MSgNOM-black
 The black guy saw him. (Figuig - Kossmann 1997:119)

Where a corresponding verb is available, it also provides the most natural way to express an inchoative:

mikk *zəwγ-ənt* *n-təttəš* *yur*
 if red.PT-3Pl 1Pl-sleep.INT month

If they [our eyes] turn red, we'll sleep for a month (Figuig - Kossmann 1997:528)

In Nafusi, the 3rd person affixes of the stative conjugation have been formally retained for some words, but agree only in number and gender, being indifferent to person (Beguinet 1931:64). For adjectives that have retained both the remnants of the stative conjugation and the corresponding nominal adjective, Beguinet (1931:118) claims the former is used for the indefinite and the latter for the definite. This may well only be a consultant's attempt to shoehorn the Berber categories into the Arabic ones available to him for translation, but suggests at least that the two are semantically differentiated.

Thus:

<i>bušil məššək</i>	<i>bušil a-məškan</i>
boy little.STAT[MSg]	boy MSg-little.ADJ
a little boy (<i>un ragazzo piccolo</i>)	the little boy (<i>il ragazzo piccolo</i>)

3.1.3 Songhay

In southern Songhay languages, a word class of attributive adjectives may be defined syntactically, as those modifiers that may come between the head noun on the one hand and the demonstrative and/or plural marker on the other. In predicative function (stative or inchoative), adjectives are expressed by corresponding verbs. Sometimes the two are segmentally identical, but in other cases the attributive form is derived from the verb by suffixation, typically of a variant of *-o* or of the possible Mande borrowing *-nte*, or reduplication (sometimes with irregular vowel changes.) In the northern languages Tasawaq and Tadakshak, the suffix *-ən*, borrowed from Tamasheq, is also used. In the Songhay languages with tone, the two may also be distinguished tonally.

Songhay (Koyra Chiini):	<i>har futu-nte</i>	<i>di</i>	(adjectival attribution)
(Heath 1999a:73)	man bad-Adj	the	
	“the bad man”		
	<i>ni futu</i>		(stative predication)
	2Sg bad		
	“You were bad”		
vs.	<i>woo či alhoor</i>		(nominal predication)
(Heath 1999a:143)	Dem be limestone		
	“this is limestone”		

In southern Songhay, when an adjective is present, plurality of the noun phrase is marked on the adjective, not on the head. The plural marking morpheme(s) could be analysed either as semantic agreement (with the referent, not the head) or as a separate word. A test for which analysis is preferable would be whether the plural marker

appears more than once when more than one adjective is present; unfortunately, no such data has been noted in the grammars consulted. Quite a different situation is found in Tadaksahak, which, under heavy Berber (Tuareg) influence, has made plural marking obligatory for both nouns and adjectives within the same noun phrase; there are some indications that this has become possible (though not obligatory) in Tasawaq too (Alidou 1988; Kossmann 2003).

In southern Songhay, an adjective acting as a nominal head takes a special 'absolute' prefix *i-* or *a-*, eg:

Koyra Chiini: *i-jeen-o di*
 ABS-old-ADJ DEF
 the old one (Heath 1999a:87)

In Tadaksahak, instead, the definite marker *ayo* is used as a dummy head:

ayo yaynáay-an
 DET be.new-ADJZR
 the new one (Christiansen-Bolli 2010:167)

3.2 Comparatives

3.2.1 Arabic

Arabic has a special comparative form of trilateral adjectives, called “elative” by Arabists, formed from the three root consonants by inserting them into the fixed template $'aC_1C_2aC_3$. For example, *kabīr-* “big”, root consonants *k-b-r*, becomes *'akbar-*:

bayt-u-hu 'akbar-u min bayt-i-ka
 house-NOM-his bigger-NOM from house-GEN-your.MSG
 His house is bigger than your house.

This comparative form has some interesting properties. It can be formed only from adjectives corresponding directly to trilateral verbs; to form a comparison with adjectives not fitting this scheme, a synthetic form with a corresponding abstract noun is used, eg:

muḥtaram- “respected” (from the verb *iḥtaram-a* “respect”)

iḥtirām- “respect (n.)”

=> *'akḥar-u* *ḥtirām-a-n*
 more-NOM respect-ACC-INDEF
 “more respected”

Unlike non-comparative adjectives, it does not display agreement in number or gender. (In Classical Arabic, agreement in gender is impossible when this form is used as a comparative, but optionally permitted when it is used as a superlative or otherwise; in North African dialects, I have never encountered agreement in gender for a comparative.)

buyūt-u-hu *'akbar-u* *min* *buyūt-i-ka*
 house-NOM-his bigger-NOM from house-GEN-your.MSg
 His houses are bigger than your houses.

It also cannot be formed from adjectives already of the form *'aC₁C₂aC₃*, which typically refer to colours (white, black, red...) or physical defects (lame, blind, deaf...)

This form is also used, either alone in the definite or with a following plural nominal in the (analytic) genitive, as a superlative. Thus:

huwa al-'akbar-u
 he the-bigger-NOM
 It/He is the biggest.

huwa 'akbar-u l-buyūt-i.
 he bigger-NOM the-houses-GEN
 It is the biggest house.

huwa 'akbar-u-hum
 he bigger-NOM-3MPIGen
 It/He is the biggest of them.

In addition to regular forms for “better”, an irregular but common one exists, with a non-elative form and with no morphologically corresponding non-comparative form: *xayr-* “better”.

The comparative form is unproductive in many Maghrebi dialects, which instead use a construction with a preposition “on”, probably a calque on Berber (Aguadé & Vicente 1997):

daṛ-u kbir-a ɣla daṛ-ək
 house-his big-FSg on house-your.Sg
 His house is bigger than your house.

However, even these typically retain at least some Classical comparatives, notably *xir* “better” and *kθəṛ* “more” (the latter has become suppletive, since the adjective *kaθīr-* has been lost.) With retained comparatives (elative or otherwise), *mən* “from” is used, just as in Classical, and just as in Classical, gender agreement is not found.

3.2.2 Berber

Neither Berber nor Songhay has a morphological comparative. Berber languages use several strategies. The commonest is probably the use of a normal predicative form of the adjective / stative verb together with a comparandum marked by the preposition “on”, eg:

Kabyle: *kəčč məqq^wɾ-əð fəll-i*
 2Sg big-2SgSTAT on-1Sg
 You're bigger than me. (Vincennes & Dallet 1960:163)

Tashelhiyt: *nəkki məqqur-əɣ f baba=k*
 1Sg big.PT-1Sg on father=your
 I'm bigger/older than your father. (Aspinion 1953:248)

A couple of high-frequency concepts, such as “better than” and “more than”, tend to be expressed by specific transitive verbs bearing no morphological relation to their non-comparative counterparts:

Tashelhiyt: *t-iftiyi t-uf a-ɣrum*
 FSg-meat 3FSg-better MSg-bread
 Meat is better than bread. (Aspinion 1953:246)

In some cases, such verbs can be combined with adjectives or adjectival nouns to offer an alternative means of expressing comparison:

Tashelhiyt: *a-frux=ad i-məqqur y-uf=iyi*
 MSg-child=DEM 3MSg-big.INT 3MSg-better=1SgAcc
 This boy is bigger than I. (Stumme 1899:50)

Kabyle: *if-əɣ=kəm t-iħħəɾši*
 better-1Sg=2FSg FSg-cleverness
 I'm cleverer than you. (Vincennes & Dallet 1960:163)

Tamasheq: *Ø-ojær abba-nnet t-əššəjrət-t*
 3MSg-surpass father-his FSg-length-FSg
 He is taller than his father. (Heath 2005a:244)

In some languages Arabic influence has led to the development of other strategies. The

borrowings *xir n* “better than” and *aktər n* “more than” are found in Kabyle (Vincennes & Dallet 1960:163), and are suppletive there just as they are in Algerian Arabic. In Nafusi, Beguinot (1931:120) reports that the Arabic borrowing *aktar* “more” is used adverbially to form comparatives, with the genitive particle *n* marking the comparandum:

nəč muqqər aktar n a-tərras uh
 1Sg big.STAT more GEN MSg-man that
 I'm bigger than that man.

In both Nafusi and the closely allied Zuwara dialect, for some adjectives, Arabic comparatives (suppletive relative to Berber) may also be used:

Nafusi: *nəč akbar n a-tərras uh*
 1Sg bigger GEN MSg-man that
 I'm bigger than that man.

Zuwara: *wəlliš həddukan əsəhl-is*
 NEG.EXIST anyone kinder-3SgPoss
 There is no one kinder than him/her. (Mitchell 2007:7)
 (< Arabic *'ashal-* “easier” < *sahl-* “easy”)

In Nafusi, the one example Beguinot gives is suppletive, non-comparative “big”, as seen further above, *muqqər*. In Zuwara, while little relevant published data is available, Mitchell (1954:416) gives an example of this pattern being extended to the Berber adjective *asəttaf* “black”, though he adds that it is “chiefly... confined to Arabic loans”:

wuhanit d a-səttaf, lakin wuhanit əsdəf-is
 this.MSg COP MSg-black but this.MSg blacker-3SgPoss
 This is black, but this one is blacker.

It is noteworthy that where relatives have been borrowed, the comparandum always

seems to be marked by a genitive construction. This may be motivated by the phonetic similarity of genitive *n* to Arabic *mān* “from”.

3.2.3 Songhay

In southern Songhay, the adjective is left as it is, and the comparandum marked with the preposition “with” (*nda*) (Heath 1999a:316ff; 1999b:341; 2005b:140). Thus:

Songhay (KC): *a* *boori* *nda* *ay*
 3SgS be-beautiful with 1Sg
 “She is more beautiful than I.” (Heath 1999a:318)

However, “better than” and “more than” are, as in Berber, expressed by separate verbs, bearing no relation to non-comparative counterparts:

Songhay (KS): *ay* *bag-aa*
 1SgS better-3Sg
 “I was better than him.” (Heath 1999b:342)

boro kul ši bis-ey kotto
 person all ImpfNeg surpass-3Pl magic
 “No one surpasses them in magical power” (Heath 1999b:341)

In northern Songhay, while insufficient material is available, it appears that constructions with verbs of “surpassing”, comparable to some of the Berber examples above and probably reflecting Berber influence to some degree, are used:

Tasawaq (Kossmann 2003):

hááwí-ghò á bisá á" sèèràynás = nás-tèèré
 cow-this 3s surpasshis friend fatness = be.fat-ABSTRACT
 “this cow is fatter than the other”

hòò-ghó à b-hín à-ghá-sàⁿ bíbí = bíbí-tèèré
 thing-this 3s IMPF-be.strong 3s-that-there blackness=be.black-ABST
 “this thing is blacker than that one”

Tadaksahak (Christiansen-Bolli 2010:249):

ay=n a-fəlcəqu a=yy-agór ná ayo wáni
 3s=GEN SG-be.flat 3s=be.more OPP DEF of
 This (receptacle) is flatter than that one

3.3 Deadjectival abstract nouns

Arabic and Berber form abstract nouns from adjectives by imposing specific templates. The commonest of these in Arabic is *CaCāC-at-*, eg (Classical):

naḍīf- “clean” > *naḍāf-at-* “cleanness”
ḥulw- “sweet” > *ḥalāw-at-* “sweetness”

In Berber, all verbs have verbal nouns, and deadjectival abstract nouns are normally analysed as the verbal nouns of the corresponding stative verbs. The templates used vary from case to case; some common examples are *tə-CCəC* (in Kabyle, Tarifit), *ta-CəCC-i* (at Figuig):

imɣur “get big” > *tə-mɣwər* “bigness” (Kabyle: Vincennes & Dallet 1960:45)
mɣər “get big” > *ta-məɣri* “bigness” (Figuig: Kossmann 1997:172)

The abstract nouns are often borrowed from Arabic in the case of Arabic borrowings:

ḥla “be sweet” > *ləḥlawət* “sweetness” (Figuig: Kossmann 1997:163)
aylay “be expensive” > *ləyla* “expensiveness” (Kabyle: Vincennes & Dallet 1960:45), cp. Algerian Arabic *yalī* “expensive”, *lə-yla* “expensiveness (def.)” <

Classical *yalī*, *al-yalā'*-

Songhay (Heath 1999a:64; 1999b:94; 2005b:96; Zima 1994:32; Tersis-Surugue 1981:146ff; Kossmann 2003; Christiansen-Bolli 2010) has several suffixes for forming abstract nouns from verbs (including adjectives). The most widespread and often the most productive of these, found in every Songhay language except Koyra Chiini, is the addition of a suffix homophonous to the (indefinite) plural clitic *yo/yan*. However, *-i/-ey* (the latter is homophonous with the definite plural clitic in eastern Songhay) is also common with adjectives, and is described as the most productive suffix for adjectives in Koyraboro Senni and Koyra Chiini. Eg:

Songhay (KC): *jeen* “old” > *jeen-ey* “old age” (Heath 1999a:64)

Songhay (KS): *faraa* “be tired” > *faraa-yan* “being tired” (Heath 1999b:89)

3.4 Siwi

As noted above, what in Arabic would be expressed as an adjective is typically expressed in Berber languages using a stative/inchoative verb. This strategy is often used in Siwi too to translate Arabic adjectives; however, no trace of the stative conjugation survives, so no justification for setting up an independent class of verbal adjectives has so far been observed. But as noted above, most Berber languages also exhibit a more limited set of nominal adjectives. These do constitute a word class in Siwi, distinguished from nouns by showing gender and number agreement with singular referents but optionally only number agreement with plurals referents, and from verbs by not agreeing in person; they are normally negated with *la*, whereas the least marked negator for nouns is *qačči*.

Siwi shows pervasive strong influence from Arabic in every one of the morphosyntactic characteristics of adjectives discussed above. This was no doubt facilitated by the extent of lexical borrowing; the following non-exhaustive list of Siwi nominal adjectives illustrates both their number and how many of them derive from Arabic. In the Arabic section, attestations from two early 19th century sources – Caillaud

(1826) and Minutoli (1827) – are compared where available, suggesting that the dominance of Arabic in the domain of adjectives predates modern education, and even Siwa's incorporation into the Egyptian state nearly two centuries ago.

Table 34

Berber origin:		Selected cognates:	
white	<i>aməllal</i>	Fig. <i>aməllal</i>	
black	<i>azəttaf</i>	Naf. <i>azəttaf</i>	
green	<i>awray</i>	Fig. <i>awray</i> “yellow”	
red	<i>azəggay</i>	Kab. <i>azəgg^oay</i> , Tam. <i>ašway</i>	
short	<i>agzal</i>	Naf. <i>agəzlal</i>	
thin	<i>azdad</i>	Fig. <i>azdad</i>	
big	<i>azuwwar</i>	Fig. <i>azəwwar</i> “fat”	
cold	<i>asəmmaṭ</i>	Kab. <i>asəmmaḍ</i> “cold”	
new	<i>atrar</i>	Cf. Kab. <i>tura</i> “now”	
right	<i>aləmfusi</i>	Cf. <i>fus</i> “hand”, Mz. <i>fusi</i> “right”	
bitter	<i>azay</i>	Fig. <i>zəzay</i>	
slippery	<i>aləṭlat</i>	Cf. Fig. <i>luḍ</i> , Kab. <i>aluḍ</i> “mud”	
dark	<i>asəllas</i>	Cf. Kab. <i>tallast</i> “darkness”	
dirty	<i>alūkkewi</i>	Cf. <i>lūkk</i> “get dirty”, Ghd. <i>əlkuk</i> “be bad” + Ar. nisba <i>-āwiyy-</i>	
big and broad	<i>zaxar</i>	Kab. <i>azayar</i> “plain (geog.)”	
big and round	<i>bəlbəl</i>	Kab. <i>bbəlbəl</i> “be fat, full”	
Arabic origin:		< Arabic:	Early attestations, if any:
yellow	<i>ləsfər</i>	<i>al-'asfar-</i>	Min. 357: Gelb - لصفار
blue	<i>asmawi</i>	<i>samā'</i> - “sky” + nisba <i>-ī-</i>	
small	<i>aḥakkik</i>	? Cl. <i>ḥakīk-</i> “worn by rubbing or friction”	Min. 357: Klein - احكوك Cail. 415: Petit - Aâccocque
sweet	<i>aḥlu</i>	<i>ḥulw-</i>	
sour	<i>ḥaməṭ</i>	<i>ḥāmiḍ-</i>	Cail. 418: Vinaigre - Amette
outstanding	<i>azʕim</i>	<i>zaʕīm-</i> “leader”	
good	<i>akwayyis</i>	Eg. <i>kuwayyis</i> , dimin. < <i>kayyis-</i> “elegant”	Cail. 414: Joli - Coeze
bad	<i>ašmal</i>	<i>šimāl-</i> “left”	
tall	<i>aṭwil</i>	<i>ṭawīl-</i>	Min. 357: Lang - اطويل Cail. 414: Long - Taouyl Cail. 418: Vieux - Tagodemte
old	<i>aqdim</i>	<i>qadīm-</i>	
old (man)	<i>šarəf</i>	<i>šārīf-</i> “old (of camel)”	
low	<i>waṭi</i>	<i>wāṭi'-</i>	
broad	<i>wasaf</i>	<i>wāsiḥ-</i>	
narrow	<i>atiyyaq</i>	<i>ḍayyiq-</i>	
wide	<i>aʕriṭ</i>	<i>ʕarīḍ-</i>	Min. 368: Breit – اعريط
thin	<i>arhif</i>	<i>rahīf-</i>	Min. 368: Fein – ارهيف
thick	<i>atxin</i>	<i>ḥaxīn-</i>	Min. 368: Dicht, dick – اتخين
deep	<i>nazəl</i>	<i>nāzil-</i> “descending”	
cheap	<i>arxis</i>	<i>raxīs-</i>	

difficult	<i>waɣar</i>	<i>waɣr-</i> “rough”	
easy	<i>sahəl</i>	<i>sahl-</i>	Min. 369: Eben, flacht - ساهل
mute	<i>ləbkəm</i>	<i>al-'abkam-</i>	
deaf	<i>lətɾəš</i>	<i>al-'aɾraš-</i>	
blind	<i>laɣmi</i>	<i>al-'aɣmā-</i>	
half-blind	<i>laɣwəɾ</i>	<i>al-'aɣwar-</i>	Cail. 410: Aveugle – Laouare
lame	<i>laɣɾəj</i>	<i>al-'aɣraj-</i>	Cail. 410: Boiteux – El – Araje
piebald	<i>lablaq</i>	<i>al-'ablaq</i>	
strong	<i>qawi</i>	<i>qawiyy-</i>	
hard	<i>gaɣi</i>	<i>qāsī-</i>	
white (animal)	<i>laššəb</i>	<i>al-'ašhab-</i>	
dark (animal)	<i>ladɣūm</i>	<i>al-'adyam-</i>	
left	<i>aɣəɣrawi</i>	<i>'aɣsar-</i> “left-handed”	Min. 364: Links - أعسر
		+ <i>nisba -āwiyy-</i>	
lazy, bland	<i>barəd</i>	<i>bārid-</i> “cold, lazy”	
near	<i>aqrib</i>	<i>qarīb-</i>	Min. 357: Nahe - قريب
far	<i>abɣid</i>	<i>baɣīd-</i>	Min. 357: Fern - بعيد
			Cail. 414: Loin - Béite
middle	<i>awəsti</i>	<i>wasat-</i> “middle”	
		+ <i>nisba -iyy-</i>	
smart	<i>faɣən</i>	<i>fātin-</i> “aware”	
stupid	<i>jahal</i>	<i>jāhil-</i> “ignorant”	
rich	<i>ašəbɣan</i>	<i>šabɣān-</i> “full (not hungry)”	
brave	<i>asjiɣ</i>	<i>šujāɣ-</i>	Min. 365: Dichten (?) يسجاع
light	<i>axfiɣ</i>	<i>xafif-</i>	Cail. 414: Léger – Acfife
clean	<i>antif</i>	<i>naɣīf-</i>	Cail. 416: Propre – Antif
chatty	<i>aduwway</i>	<i>dawwā</i> “make a sound”	Min. 369: Schwatzhaft دوي
short and fat	<i>daħdaħ</i>	<i>daħā</i> “(of belly) large, hanging down”	
other	<i>laxar</i>	<i>al-'āxar-</i> “the other”	

3.4.1 Agreement morphology

Agreement morphology is almost entirely Berber, even for Arabic loans:

<i>Table 35</i>	small (N1p23): (< Arabic?)	big (N1p24): (< Berber)	mute (N1p127) (< Arabic 'abkam)
MSg	<i>a-ħəkkik</i>	<i>a-zuwwar</i>	<i>ləbkəm</i>
FSg	<i>ta-ħəkkək-t</i>	<i>ta-zuwwar-t</i>	<i>t-ləbkəm-t</i>
MPl	<i>i-ħəkkik-ən</i>	<i>i-zuwwar-ən</i>	<i>lbəkm-ən</i>
FPl	<i>ti-ħəkkik-en</i>	<i>ti-zuwwar-en</i>	<i>tə-lbəkm-en</i>

This contrasts with some varieties such as Figuig (Kossmann 1997:118), in which a number of borrowed adjectives take Arabic agreement morphology throughout.

However, there are some exceptions. Ordinal numbers are the only ones known to

retain their full original Arabic inflection, including gender (cf. Vycichl 2005:215):

- 3.1 *lxams-a* *tə-swa,* *ssatt-a g* *aqəsri*
 fifth-F 3F-drink, sixth-F in container

The fifth drank, the sixth is in the container. [proverb alludes to grain, which is irrigated five times and then harvested] (N2p195)

But adjectives referring specifically to types of human, notably nationalities, sometimes retain their original Arabic masculine plurals:

- 3.2 *yusənd* *itadəm* *franşawiy-ya*
 3P.come people French-PL

The French people came. (N1p138)

afəqri (sg) > *ləfqara* (pl) “poor” (2009-11-11) (Cl. Ar. *faqīr-*, pl. *fuqarā’-*; Eg. Ar. *fa’ri*, pl. *-yyin* “unlucky”)

Thus in the following near-minimal pair of sentences, both using the same adjective of Arabic origin in the same attributive context, the first displays an Arabic internal plural, without the Berber circumfix *i-...-ən* nor *ti-...-en*:

- 3.3 <Sen enterwaween s3ayda ye3en3nena esseeh.>
sən *n* *tərwawen* *ş3ayda* *i-ʕənʕən-in-a* *ssih*
 two GEN women Saidi.PL 3-sit-P-PF there
 Two Saidi (Upper Egyptian) children are sitting there. (2009-01-10/email)

while the second shows the feminine singular form using exclusively Berber morphology, rather than the appropriate Arabic ending *-a*:

- 3.4 <talte tas3edet tshareft tefl-a slateen.>
talti *ta-şʕidə-t* *t-şarəf-t* *tə-fl-a* *sləttin*
 womanF-Saidi-F F-old-F 3F-go-PT yesterday

The old Saidi woman left yesterday. (2009-01-10/email)

Agreement is ambiguous with feminine plural targets. Some speakers use the feminine plural forms, eg:

- 3.5 *lʁabi ti-zaggay-en*
cars FPl-red-FPl
red cars (N1p166)

However, others consistently use masculine plural forms in plural agreement irrespective of target gender, reserving the feminine plural forms for cases when the adjective is acting as a head noun rather than a predicate or attribute. This feature replicates Egyptian and more general sedentary Arabic, in which gender is typically not distinguished in plural agreement; it also extends a trend already found in verbal subject agreement and pronouns, where gender is never distinguished in the plural. This trend does not extend to local Bedouin Arabic, which retains distinct genders in the plural; however, in light of the independent evidence for early and extensive sedentary Arabic influence in Siwi (Souag 2009), and the current influence of Lower Egyptian Arabic, it is likely that Arabic influence is to be implicated in this development, either directly or through having triggered the preexisting loss of plural gender distinctions in other agreement targets.

- 3.6 *ti-sammaʕ-en* *i-zuwwar-ən*
FPl-headphone-FPl MPI-big-MPI
big headphones (N1p147)

- 3.7 *wiyy-ok* *tə-ččiw-en* *n* *i-ħakkik-ən*
DEM.PL-2:M FPl-girl-FPl GEN MPI-small-MPI
Those are young girls. (N1p168)

- 3.8 *tə-ččiw-en* *n* *kwayys-ən*
FPl-girl-FPl GEN good-MPI

good girls (N1p168)

There are modifiers that do not take agreement morphology, notably *drus* “few (inanimates)”, *dabb* “numerous, many”, *kom* “much”, *nnoba* “all”, *xlaf* “different”, and *zliṭa* “naked”. The first four are not archetypal adjectives – they quantify or identify the referent, rather than its properties – and are thus best seen as a separate word class (although *laxar* “other” behaves like a normal adjective.) It is not semantically clear why *zliṭa* (an early loanword, cf. Egyptian and Syrian Arabic *zalt*, Cail. 415: “Nu, nue – Zélétan”) should fall into this category. However, in taking no agreement morphology it faithfully reflects an idiosyncratic property of this word in Arabic. This phenomenon may be explained etymologically; this word derives from Turkish (Prokosch 1983:111), and its source *salt* “merely, solely, absolutely; mere, simple” (Hony, Iz, & Alderson 1992) not only takes no agreement (like all adjectives in Turkish) but is itself a quantificational adverb.

3.4.2 Aspectual morphology

Like verbs (Chapter 7), some adverbs (N2p102) and even some prepositional phrases (N1p49), adjectives can take the suffix *-a*. The meaning of this suffix in non-verbal contexts requires further investigation, and informants find it impossible to render the difference convincingly in Arabic (as also found by Vycichl 2005:213); while its verbal usage suggests a gloss of “perfect”, it will be glossed as -PF throughout, but this has not been verified for non-verbal contexts. With predicative adjectives, as with verbs in the intensive, it is best translated by English “while”, eg:

- 3.9 *yúsəf mār̄ra yə-ɾž-á* *ləmnám, nəttá* *a-ħəkkik-a,*
 Joseph once 3MSg-dream-PT dream he MSg-small-PF
 mqbál ge-yə-ħmár *ənnbí*
 before FUT-become.AOR prophet

Joseph once dreamt a dream, while he was small, before he became a prophet.

(2008-0503/0246; also N2p15)

This form is also used following *s*, normally “with (instrumental)”, to mean “since” or “from”:

3.10 *s a-ħakkik-a*
with MSg-small-PF
“since childhood”

3.11 *s a-bʕid-a*
with MSg-far-PF
“from afar” (N4)

This clearly does not derive from or even have a counterpart in Arabic, and thus will not be investigated in detail here.

3.4.3 Attribution

Attribution is handled by placing the adjective after the noun – either directly, or with an intervening *n* (normally a genitive marker.) In either construction, the adjective agrees with the head noun:

3.12 *dí t-yazəʔ n ta-mállal-t*
EXISTF-chicken GEN FSg-white-FSg

There are white chickens [generic sg.] (and there are red chickens). (N2p99)

Vycichl (2005) noted the existence of this construction with little comment on its semantics; he suggests in his introduction that it relates to indefiniteness, but this does not seem to be borne out by my data, since some instances of this construction were translated by the speakers as specific definites:

3.13 *wiyyok tə-ččiw-en n i-ħakkik-ən*
those.MPl.2=MSg FPl-girl-FPl GEN MPl-small-MPl

Those are the small girls (*il-banāt aš-šiyār*) (N2p168)

My impression is that the *n*-construction is used when the adjective is generic, identifying a type, rather than attributing a property to a specific object, as suggested by examples like this:

- 3.14 *lāqmiṣ n a-mállal i-lǔkku ʕlaṭul*
 shirt.DEF GEN MSg-white 3M-get dirty always
 A white shirt always gets dirty. (2008-05-07/323)

- 3.15 *g-mani lāqmiṣ a-zəttáf?*
 at-where? shirt.DEF MSg-black
 Where is the black shirt? (2008-05-07/323)

However, one informant rejected this and instead suggested that it was used when the adjective represents new or contrastive information:

- 3.16 *law mujarrad waṣf, waṣf littibyān faqaṭ, yakūn agg^wid aṭwil. lammā ykūn fih ṣay' min taṣajjub, ngūlū: zṛix agg^wid n aṭwil.* (Sharif Bugdura/2008-04-27/file0227-tanwin)

“If it's just a description, a description for clarification only, it will be *agg^wid aṭwil* [a tall man]. When it contains an element of astonishment, we say: *zṛix agg^wid n aṭwil* [I saw a *tall* man].”

The question of its precise function will require further investigation through corpus work.

The form of this construction is rather suggestive of a borrowing from Arabic *tanwīn* (indefinite marking with an *-n* suffix), rendered less implausible by the fact that *tanwīn* is still used to some extent in Western Desert dialects. *Tanwīn* in Classical Arabic is an indefinite marker taking the form of an *-n* following the case markers and indicating generic indefiniteness, found in several of the examples above; however, in all of the few (mostly Bedouin) colloquials that have retained it (Owens 2006:105), it is instead a

linker *-n* placed between a generic indefinite noun and a following modifier, in particular an adjective:

Andalusi Arabic: *muslim-īn-an* *liṭāf*
 Muslim-PL-LINK bad.PL
 bad Muslims (Corriente 1997:121, via Owens 2006)

Shukriyya (Sudan): *ba-jī-k* *wakt-an* *garīb*
 1SgImpf-come-2Sg time-LINK near
 I will come to you soon (=in a near time) (Reichmuth 1983:190)

But the Siwi *n* differs from *tanwīn* in some important respects. Syntactically, whereas Arabic *-n* is a suffix attached to the noun, Siwi *n* forms a unit with the adjective, and *n*+adjective can be used as a standalone indefinite noun:

3.17 *dīy n a-zūwwar, dīy n a-ḥākkik*
 EXIST GEN M-big, EXIST GEN M-small
 There are big ones and there are small ones. (with generic singular) (N2p100)

Semantically, Arabic *tanwīn* is used as a marker of indefiniteness, and, as noted, whatever its exact function is, Siwi *n* seems to be independent of definiteness.

Moreover, Arabic influence is not the only explanation conceivable here. An alternative language-internal source of *n* could be a shortening of the relative pronoun (m./pl. *wān*, f.sg. *tān*); Tamashek (Heath 2005a:481ff) displays a comparable alternation between (indefinite) N+Adj and (definite) N+Rel+Adj, though its adjectives are verbal rather than nominal. Little evidence for contact with Coptic has been observed in Siwi, but Coptic adjectives too use an *n* construction, eg:

t-parthenos *n-sabē*
 DEF.FSg-virgin *n*-wise
 the wise virgin (Reintges 2004:91)

In light of all these objections, I provisionally class this similarity as coincidental rather than contact-induced.

3.4.4 Predication

As expected for Berber, and as in Arabic, positive predication is handled with the same constructions as for nouns. For this, Siwi uses juxtaposition for the simple present, and the verb *ʕmaɾ*, otherwise “do” (the synonymy between “do” and “be” also holds in Tashelhiyt), in other moods or aspects:

3.18 *fus a-twil-a*
sleeve M-long-PF
a long sleeve (N1p27)

3.19 *fus-ənnəs a-twil-a*
sleeve-3SPoss M-long-PF
Its sleeve is long. (N1p27)

3.20 *ʕmaɾ kwayyis-a*
do good-PF
“be good” (N1p177)

3.21 *anni ge-y-ʕmaɾ a-zuwwar-a*
so IRR-3M-do M-big-PF
“so it will be good” (N1p178)

Cp. nominal predication:

3.22 *t-ok əlkubɾa ya*
that.FSg-2:M cobra right

That's a cobra, right? (N2p125)

- 3.23 *w-ok* *lušš n tafəlliləst*
 that.MSg-2:M nest GEN swift
 That's a swift's nest. (N2p127)

- 3.24 *a-glim-ənnəs* *nnoba n tiqəššaṛ*
 MSg-skin-3SgGen all GEN peels
 His skin is all peels. (N2p111)

- 3.25 *yə-ḡmaṛ* *siwi*
 3Sg-be Siwi
 He became Siwi (N2p97)

- 3.26 *ge-yə-ḡmaṛ* *əlqmis*
 IRR-3MSg-be shirt
 Let it be a shirt (2008-08-03/0246).

- 3.27 *niš* *sg* *əlləwwəl* *anəjjar,* *amra* *ḡumṛ-ax* *aḥəddad.*
 I from first carpenter, now be.INT-1Sg smith
 I was originally a carpenter, now I'm being a blacksmith. (N2p141)

The use of simple juxtaposition for plain copular sentences may represent Arabic influence; most Berber languages use a particle *d*. However, several other heavily Arabised languages, such as Nafusi, use the Arabic construction, so the evidence is not conclusive.

In one respect, adjectival predication differs from nominal predication. Siwi has two primary negators, both Arabic loanwords: *la* and *qačči*. In general, *la* is used for sentential negation, and *qačči* for metalinguistic negation. However, *qačči* is the usual negator for nominal predicates, whereas *la* is the default negator for adjectives, predicative or attributive:

- 3.28 *itadəm la kwayys-ən*
 people NEG good-3Pl
 un-good people.

- 3.29 *la a-ħlu bla nətta*
 NEG MSg-sweet without 3SgM
 It's not sweet without you. (N1p146)

In other Berber languages, nominal adjectives typically have corresponding stative/inchoative verbs (sometimes limited to certain syntactic contexts). In Siwi too, most adjectives have corresponding verbs, formed from the root consonants; but the corresponding verbs are inchoative alone, rather than being used for stative predication – just as in Arabic. Thus:

- 3.30 *ljəww yə-kwəs*
 weather 3M-get better
 The weather has improved/*is good. (N1p47)

- 3.31 *márra ta-ħəkkək-t, abaɣdén tə-zwár*
 once FSg-small-FSg, afterwards 3F-get big
 Once it was small, then it got big. (N2p34)

- 3.32 *yə-lləɣfər*
 3M-yellow
 It turned yellow. (N2p227)

Some inchoative verbs formed from Arabic loan adjectives starting with *l-* substitute *n-*, historically reflecting a separate borrowing of an Arabic inchoative middle verb:

- 3.33 *i-gálləs ál i-naɣmá*
 3M-cry.INT until 3M-blind

He kept crying until he went blind. (2008-05-03/0246) – cp. *laṣmi* “blind”

A few adjectives do not have corresponding inchoative verbs; instead, a supporting verb is used:

- 3.34 *yi-γláy* *a-smawí*
 3M-turn MSg-blue
 It turned blue (N2p227)

3.4.5 Comparison

Remarkably, Siwi has copied the Arabic method of forming comparatives, and superlatives; it also uses a template borrowed from Arabic to form abstract nouns from adjectives.

A comparative form of trilateral adjectives, already noted in Walker (1921:32), is constructed by imposing the template $CC\partial C$ (a method with no reported parallels elsewhere in Berber), and marking the comparandum with genitive n (N2p43). Arabic short vowels normally become ∂ in Siwi, and initial ∂ is non-contrastive (optional before consonant clusters, impossible otherwise); so this is the expected phonemic form of the Arabic template. But not only does it share the form – it shares other peculiarities of this construction, including its restriction to trilaterals (other adjectives use a construction with *tumm* “more”), its lack of inflection for gender, and its use for the superlative with a third person plural Arabic possessive pronoun suffix. While previous works have not explicitly acknowledged this template's derivation from Arabic, the evidence is clear-cut.

Morphologically (cf. Souag 2009), it is formed by imposing the template $C_1C_2\partial C_3$ on a trilateral adjective, which can be of several forms including $a-C_1C_2VC_3$, $C_1aC_2\partial C_3/C_1aC_2aC_3$, $a-C_1C_2ayyiC_3$, $a-C_1\partial C_2C_2VC_3$, and $aC_1\partial C_2C_3an$. (As in Arabic, it cannot be formed from longer adjectives.) Thus:

Table 36.

<i>agzal</i> “short”	>	<i>gzal</i> “shorter”	(< Berber)
<i>azəttaf</i> “black”	>	<i>ztəf</i> “blacker”	(< Berber)
<i>azuwwar</i> “big”	>	<i>zwər</i> “bigger”	(< Berber)
<i>aqdim</i> “old”	>	<i>qdəm</i> “older”	(< Arabic)
<i>ašmal</i> “bad”	>	<i>šməl</i> “worse”	(< Arabic)
<i>wašar</i> “difficult”	>	<i>wšər</i> “more difficult”	(< Arabic)
<i>akwayyis</i> “good”	>	<i>kwəs</i> “better”	(< Arabic)
<i>ašəbšan</i> “rich”	>	<i>šbəš</i> “richer”	(< Arabic)

If the third radical is weak (etymological *y* or *w*), yielding patterns such as $a-C_1C_2V$ and C_1aC_2i , the result is CCa :

<i>qawi</i> “strong”	>	<i>qwa</i> “stronger”	(< Arabic)
<i>gaši</i> “hard”	>	<i>gša</i> “harder”	(< Arabic)
<i>ħlu</i> “sweet”	>	<i>ħla</i> “sweeter”	(< Arabic)

Unlike Classical Arabic, when the last two root consonants are identical they are still separated by a schwa rather than becoming a geminate:

<i>aməllal</i> “white”	>	<i>mləl</i> “whiter”	(< Berber)
<i>axfif</i> “light”	>	<i>xfəf</i> “lighter”	(< Arabic <i>xafif</i> -)

The examples in Walker (1921:67ff), if reliable, suggest that $ləC_1C_2əC_3$ and $ləC_1C_2V$ adjectives may once have taken the comparative forms $C_1C_2əC_3$, $ləC_1C_2a$ respectively:

“blind”	<i>lámêê</i> > comparative <i>lamùng</i>
	<i>lašmi</i> * <i>lašma</i>
“brown”	<i>lasmarr</i> > comparative <i>asmàrr</i>
	<i>lasmər</i> * <i>smər</i>

However, these have not been borne out by my own fieldwork, where adjectives of this form, including those he lists, were either given analytic comparatives with *tumm* (eg *ləšfər* “yellow”) or rejected as impossible to form comparatives of (eg *lətṛəš* “deaf”.)

There may also be a limited number of trilateral stative verbs that also allowed a morphological comparative:

“hoarse” *inzikêéma* > comparative *zikûm*, superlative *zikûmhum* (Walker 1921:69)

“enrhumé” *anzəkəm*, “plus enrhumé” *zəkəm* (Laoust 1931:231, 104)

One possible example seems to involve the Berber verb *yə-llay*:

“crooked” *yilèa* > *lé*, *léhum* (Walker 1921:68)

Again, this was not borne out by my data, and Siwis I spoke to did not recognise the form *zkəm*, the only one of these found in more than one source. I did record one regular morphological comparative formed from a quantificational modifier not varying for gender or number: *drus* “few (with inanimates)” > *drəs* “fewer, less”.

Like Arabic comparatives borrowed into other Berber languages, its complement takes the genitive particle *n*:

3.35 *nətta tʷəl n aṃṃ^wa-s*

he taller GEN brother-3Sg

He is taller than his brother. (N1p3)

3.36 *čərčər ħkək n əlbət*

duck smallerGEN goose

Ducks are smaller than geese. (generic singular) (N2p102)

The superlative is formed by suffixing *-hǔm*, the Arabic (but not Siwi) third person masculine plural possessive suffix, to the comparative:

azuwwar “big” > *zwarhǔm* “the biggest” (< Berber)

ašmal “bad” > *šmalhǔm* “the worst” (< Arabic)

akwayyis “good” > *kwəshǔm* “the best” (< Arabic)

Its Arabic origin was briefly noted by Vycichl (2005:212), who observed that a similar construction was common in Sudanic Arabic. Determinative superlatives can be formed with a preposed plain comparative form, as in Arabic:

- 3.37 <Aala adrare gedenyet della Elhend.>
ɣla adrar g əddənyət di-lla əlhind
 higher mountain in world M-be at India
 The highest mountain in the world is in India. (2009-01-10/email)

or with a postposed superlative form:

- 3.38 *adrar ɣla-hūm*
 mountain taller-SUP
 “the tallest mountain” (2009/02/12)

There are several suppletive comparatives, such as *xer* “better”, from Arabic, and *tumm* “more” (N1p22), of uncertain origin. These form comparative constructions and superlatives like regular comparatives, eg:

- 3.39 *nəšni xer-nsən*
 we better-3PlGen
 We are better than them. (N1p148)

- 3.40 *xer-hūm tikli rəsmi*
 better-SUP going official
 The best [option] is an official trip. (N1p113)

- 3.41 *xer-hūm g laḥzab əlhizb-əlwaṭani*
 better-SUP in parties National Party
 The best of the parties is the National Party. (N1p257)

Non-trilateral adjectives, and verbs expressing properties, normally form a comparative using the adverb *tumm* “more”, eg:

- 3.42 *yə-qqur* *tumm n* *wa*
 3M-dry more GEN this.MSg
 It's drier than this. (N2p43)

- 3.43 <Essainin ennes yelsefrena tom nessainin inno.>
isenən-ənnəs *yə-lšəfr-in-a* *tumm n* *isenən-ənnəw*
 teeth-3SgGen M-yellow-MPI-PF more GEN teeth-1SgGen
 His teeth are yellower than mine. (2009-01-10, email)

3.4.6 Deadjectival nouns

The deadjectival noun, not previously documented (cf. Souag 2009), is formed from trilaterals only using the Arabic definite article *lə-/əl-* + *C₁C₂aC₃ət*. The article appears as *lə-* before lunar (non-coronal) consonants, and *əC₁-* with gemination before solar (coronal) ones, faithfully reproducing a morphophonological idiosyncrasy of the Arabic definite article. The form is present in Arabic (eg Classical *naḏāfah* “cleanliness” *نظافة* < *naḏīf* “clean” *نظيف*) but has been generalised to be productive for all trilateral adjectives, Arabic or Berber. Thus:

Table 37.

<i>aməllal</i> “white” (< Berber)	>	<i>ləmlalət</i> “whiteness”
<i>awṛaḡ</i> “green” (< Ber. “yellow”)	>	<i>ləwṛaḡət</i> “greenness”
<i>agzal</i> “short” (< Ber.)	>	<i>ləgzalət</i> “shortness”
<i>azəṭṭaf</i> “black” (< Ber.)	>	<i>zzəṭafət</i> “blackness”
<i>atrar</i> “new” (< Ber.)	>	<i>ttrarət</i> “newness”
<i>azdad</i> “thin” (< Ber.)	>	<i>əzzdadət</i> “thinness”
<i>azuwwar</i> “big” (< Ber.)	>	<i>əzzwarət</i> “bigness, size”
<i>aḥəkkik</i> “small” (etym. unclear)	>	<i>ləḥkakət</i> “smallness”
<i>atxin</i> “thick” (< Arabic <i>ثخين</i>)	>	<i>əttxinət</i> “thickness”
<i>akwayyis</i> “good” (< Egy. Arabic)	>	<i>ləkwasət</i> “goodness, beauty”
<i>ašmal</i> “bad” (< Ar. “left”)	>	<i>ššmalət</i> “badness”
<i>anṭif</i> “clean” (Ar. <i>نظيف</i>)	>	<i>nntəfət</i> “cleanness”
<i>šarəf</i> “old (human)” (Ar. <i>شارف</i>)	>	<i>ššrafət</i> “old age”
<i>wasaf</i> “wide” (< Ar. <i>واسع</i>)	>	<i>ləwsafət</i> “wideness”
<i>atiyyaq</i> “narrow” (< Ar. <i>ضيق</i>)	>	<i>ttyaqət</i> “narrowness”
<i>aṭwil</i> “long, tall” (< Ar. <i>طويل</i>)	>	<i>ṭṭwalət</i> “length”

If the third radical is weak, the result is *lCCawət*:

hami “hot” (< Ar. *حَامٍ*) > *ləhmawət* “heat”

The template is occasionally attested for professional nouns, eg *nnjarət* “carpentry” (N2p19) < *anəjjar* “carpenter” (both < Ar.).

There was no clear agreement between speakers on the formation of deadjectival nouns from adjectives of other forms; in some cases, the corresponding inchoative verbal noun was given, eg:

ləsfər “yellow” > *-ləsfər-* “turn yellow” > *a-ləsfər* “turning yellow / yellowness”

In no case was an attempt made to shoehorn a quadrilateral root into the trilateral deadjectival noun template above.

3.5 Kwarandzyey

Complex noun phrases in Kwarandzyey rigidly display the following order of constituents (for numbers up to 10 – higher numbers obey different rules):

N – Num – Adj – Pl – Relative clause

Thus, for example:

3.44 *adəra inza bya=γ=yu*
 mountain three big=DEM=PL
 these three big mountains

3.45 *ər=dz ʕa-ggwa binəw*
 man=REL.ANA 1S-see yesterday
 the man that I saw yesterday (N9p90)

I will define only words that can appear in attributive function before demonstratives

and plural markers and after numbers from 1-10 as adjectives. Non-adjectival verbs cannot appear in this position in any form; for example, to say “going men” the only option is to use a relative clause:

- 3.46 *bɑ* *ɣ* *i-bɑ-dri* / **bɑ* *dri* *ɣu*
 person PL 3P-IMPF-going (*person go PL)
 going men

This definition does not suffice on its own to distinguish adjectives from nouns, however. Nominal appositions are extremely rare in Kwarandzyey, and only one example in the plural has so far been successfully elicited – but it shows the same syntax as for adjectives:

- 3.47 *ɑn* *tsɑ* *lfəllaħ.in* *i-kka*
 3SgGen brotherfarmer.PL 3PL-come
 His brothers the farmers came. (2009-01-04)

Therefore I propose a further test: an adjective cannot be used on its own as a noun head. Instead, when an adjective is to be used without a noun head, the semantically empty nominal head *uɣ* is used (together with the predicative form of the adjective, where the distinction is relevant.)

- 3.48 *tsbɑ=ɣəy.si* *uɣ=yyara* / **tsbɑ=ɣəy.si* *ɣara*
 show=1S.Dat ABS=yellow * show=1S.Dat yellow
 Show me the yellow one. (2009-01-04)

- 3.49 *na-ɣəy* *uɣ=bya=ɣu*
 give-1S ABS=big=DEM
 Give me this big one (N5p204)

An anomalous case is *fyət* / *fyət* / *fyətən* “other”; like the number “one”, which etymologically constitutes the first part of this word, it takes the nominaliser *a-*: *a-fyət*

“another”.

In Kwarandzyey, the inherited Songhay model for adjectives (possibly reinforced by its similarities with the Berber one) remains strongly predominant. Nonetheless, Arabic loans are well-attested.

3.5.1 Form of Arabic borrowings

3.5.1.1 Verbal

Adjectives in Songhay are effectively a subclass of verbs, and the dominance of verbal predication for adjectives in Kwarandzyey is underlined by the fact that most adjectives borrowed from Arabic are borrowed in a verbal form, which in the source language would have been restricted to inchoative senses, rather than in their far commoner adjectival forms. In Kwarandzyey, trilateral Arabic verbal borrowings usually take the Arabic imperfect 3rd person masculine singular prefix *i-/y-*, while longer ones are borrowed as the stem; probably as a result of Berber influence, any final vowels automatically become *-a* (see Chapter 7.) Note that some inchoative verbs in Maghrebi Arabic can also occasionally be used statively; but such uses are marginal, and are not listed (Prémare 1993) for most of the borrowings here. Thus:

Arabic (Maghrebi):	<i>qasəḥ</i>	tough (attributive/stative)
	<i>yə-qsaḥ</i>	3MSg-get tough (inchoative)
	<i>maḍi</i>	sharp
	<i>yə-mḍa</i>	3MSg-get sharp
	<i>ḥlu</i>	sweet
	<i>yə-ḥla</i>	3MSg-get/be sweet

Eg: 3.50 *dak* *əd-dəllaḥ* *ḥlu*
 DEM.DIST.PL the-watermelon sweet
 That watermelon is sweet.

3.51 *kayən* *gaṭṭuw-at* *ḥluww-in* *hna*

EXIST biscuit-PL sweet-PL here

There are some sweet biscuits here.

- 3.52 *axdəm baš tə-qsah*
 work so that 2S-get tough
 Work so you get tough.

Kwarandzyey: *yəqsəh* tough (attributive/stative/inchoative)
 yəmɖa sharp (attributive/stative/inchoative)
 yəhla sweet (attributive/stative/inchoative)

- Eg: 3.53 *laxxʷəd nə-qqəsm-ana* - *aħħahaħa, a-yəhla!*
 when 2S-divide-3SEmph [ideophone] 3S-sweet
 When you've divided it [the watermelon], wow it's sweet!

- 3.54 *gaɬ=fʷ yəhla=dz=yu*
 biscuit=one sweet=ANA=PL
 those tasty biscuits (N5p204)

- 3.55 *i-nnən-dza ddəllaħ mɕad a-yəhla*
 3P-drink-CAUS watermelon until 3S-sweet
 They irrigated the watermelon until it got sweet (2009-01-04)

The following far from exhaustive list illustrates the regularity of this strategy:

<i>Table 38.</i>		M. Ar. (verbs)
<i>yəhwən</i>	easy	<i>yə-hwan</i>
<i>yəqsəh</i>	hard	<i>yə-qsah</i>
<i>yərɬəb</i>	soft, moist	<i>yə-rɬab</i>
<i>yəhla</i>	sweet	<i>yə-ħla</i>
<i>yəbsəl</i>	bland	<i>yə-bsal</i>
<i>yəmɖa</i>	sharp	<i>yə-mɖa</i>
<i>yəwsəɸ</i>	wide	<i>yə-wsaɸ</i>
<i>idiq</i>	narrow	<i>i-diq</i> (< <i>i-ɖiq</i>)
<i>yəxwa</i>	empty	<i>yə-xwa</i>
<i>yəɣra</i>	expensive	<i>yə-ɣla</i>
<i>yərxəs</i>	cheap	<i>yə-rxəs, yə-rxas</i>
<i>yəsdəq</i>	flourishing, productive	<i>yə-sdəq</i> (< <i>yə-ɣdəq</i>)
<i>yəsrəx</i>	skin (as adjective: skinned)	<i>yə-sləx</i>

The shortening of *a* in final closed syllable is a fairly common sound change in Kwarandzyey, although it has not affected all borrowings.

There are a couple of exceptions, deriving from transitive verbs:

<i>ʕalla</i>	high	<i>ʕalla</i> “make high” (but intr. <i>t-ʕalla</i>)
<i>kʷmʷəʃ</i>	shrivelled; tied (parcel)	<i>kəmməʃ</i> (second meaning < Berber
<i>kms</i> “tie (parcel)”		

Note that not all the verbs that might have been expected to be borrowed as adjectives are in fact adjectives; for example, verbs of emotion use relative clauses to form the attributive, although Arabic has corresponding adjectives (*fəḥān* in this case):

3.56	<i>tsbɑ</i>	<i>ɣəy.si</i>	<i>iz</i>	<i>kədda=ɣ=ba-yəfɪrəḥ</i>
	show	1Sg.Dat	child	little=REL=PF-happy
	Show me the happy kid. (2009-01-04)			

The few adjectival Berber loans so far noted also mostly appear to be based on verbal forms⁶. At least three lack a subject prefix, two of them stative verbs:

<i>yara</i> “yellow”	Zen. <i>yārā</i> (yr?) adj./st.v.
<i>zəgzəg</i> “green/blue”	Zen. <i>zəgzəg</i> (zɣzɣ) adj./st.v. “grey/yellow/light orange”, Kab. <i>azəgzaw</i> “green, blue”
<i>fəxs</i> “broken (head)” cf. Taznatit <i>yətfəxsi</i> “open (of flower)” (Mammeri 1984:156)	

Note that, unlike some colours, these are verbal:

3.57	<i>a-s-ba-yyara;</i>	<i>a-s-ba-zzəgzəg</i>
	3Sg-NEG-PF-yellow;	3Sg-NEG-PF-blue
	It is not yellow; it is not blue. (2009-01-04)	

Another reflects a subject participle form, with the 3rd person masculine singular prefix:

⁶ *fəd* “thirsty”, cf. Zen. *fəd* “thirst (n.)”, *yäffud* “be thirsty”, is a verb not an adjective: *na iri uyudzisi ibaffəd* (2009-01-05).

yakən “dirty” Zen. *yärkiy* (rky) “dirty”, Kab. *rku* “spoil”
 + participial suffix *-ən*
 (postvocalic *r*-loss is regular)

The precise form from which *fusəs* “light” derives is unclear, since neither verbal nor nominal equivalent attested Berber forms have a *u* in the first syllable; cf. Kabyle *ifsus* (v.) / *afəssas* (n. adj.), Tashelhiyt *ifsus*. It may be proto-Northern Songhay, in light of Tasawaq *fūsús*. *fyət* / *fyəṭ* / *fyəṭən* “other” is a Songhay-Berber hybrid, < *fu* “one” + *yəṭn* “other”; *yəṭn* in Berber is morphologically also a participle, but has no corresponding verb..

There is precedent for Kwarandzyey's strategy for adapting Arabic loans with the 3rd person masculine singular prefix *i-/y-* elsewhere in Songhay. For Berber loans, examples are available for most Songhay varieties, Southern as well as Northern:

KC: *yulwa* (space) be ample, be spacious *yulwa-nte* wide, spacious
 KS: *yulwa* (space) be ample, be spacious
 Tamashek *-olwa-* (room, yard) be spacious, (land) be vast

Kaado: *yùrkàm* wither *yùrkàmàntó / á* withered
 Tamashek *-rəkkəm-* be weak; be sick (weakened by sickness or old age)

Tagdal:
 yìgdáz “be narrow” *yìgdáazàn* “narrow”
 yiláz “be ugly” *yiláazan* “ugly”
 (Tms. *-əlǎš-*)

Tadaksahak:
 yibrár “be bad” *yibráaran* “bad” (Tms. *-əbrär-*)
 yaráy “be yellow” *yárayan* “yellow” (Tms. *-ǎray-*)

No clear-cut examples of Arabic verb forms borrowed as adjectives were found in Kaado, Koyraboro Senni, or Tagdal. One was noted in Tadaksahak, but this word may have been borrowed via Tuareg:

Tadaksahak	<i>yishá</i>	be strong	<i>yish-án</i>	strong
Tamashek	<i>-æššoħæ-t-</i>	be healthy		

Koyra Chiini includes several Arabic loans of this type (Heath 1998). Some may have been mediated via Tamashek:

<i>yaamar</i>	be predominant, be in fashion			(γmr)
<i>yaraasu</i>	be easy	<i>yaraasu-nte</i>	easy	(rys)
<i>yassahaa</i>	be in good health			(šx)

but for others no cognate is attested in Heath's Tamashek dictionary (Heath 2006):

<i>yahdar</i>	be ready, available	<i>yahdar-nte</i>	ready	Ar. ħḍr 3ms. impf. <i>ya-ħḍar-</i>
<i>yakwa</i>	be firm, robust	<i>yakwa-nte</i>	strong, firm, powerful	Ar. qwy 3ms. impf. <i>ya-qwā</i>
<i>yiskan</i>	(child) be still, stop running around			Ar. skn 3ms. impf. <i>ya-skan-</i>

although some Arabic adjectives are borrowed in adjectival form:

<i>saahĩ</i>	be firm, solid	<i>saahi-nte</i>	firm, solid	Ar. šħħ Active ptcl. <i>šahĩh-</i> (possibly contaminated by <i>šāħi-</i> “awake, aware”)
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3.5.1.2 Nominal

Nominal adjectives in Arabic and Berber, as seen above, can act either as adjectives or as noun heads. A certain number of adjectives have been borrowed in definite adjectival/nominal form, and constitute nouns in Kwarandzyey.

The ordinal numbers are all Arabic, and all include the prefixed definite article. Eg:

	Table 39.	M. Ar.	Cl. Ar.
1st	<i>lluwwəl</i>	<i>l-luwwəl</i> “the first”	<i>al-'awwal-</i>
2nd	<i>zzawəj</i>	<i>z-zawəj</i> “the second”	cf. <i>zawj</i> “pair”
3rd	<i>ttsaləts</i>	<i>t-talət</i> “the third”	<i>aθ-θāliθ-</i>

But, whereas in Arabic they display agreement and must thus be considered adjectives, in Kwarandzyey they are nouns by my definition. While they can (comparatively

rarely) occur in apposition, eg:

- 3.58 *na iz kadda zzawəj=si ləktab=γu.*
 give child small second=DAT book=DEM
 Give the second child the book. (2009-01-04)

they fail the second test, in that they occur as noun heads without any dummy head or extra morphology:

- 3.59 *tsbq γəy.si ttsaləts*
 show 1Sg.Dat third
 Show me the third one. (2009-01-04)

They also, like many nouns but unlike adjectives, retain a head-internal plural:

- 3.60 *yu lluwlin=dz=yu uyudz=i-bq ustralya=ka*
 camel first.PL=ANA=PL REL.ANA=3PL-EXIST Australia=LOC
 The first camels in Australia... (2009-01-04)

I draw the same conclusion with regard to “right” and left”, both showing Berber influence⁷:

- 3.61 *tsbq γəy.si tsi agəmmu*
 show 1Sg.DAT foot right
 Show me your right foot. (2009-01-04)
- 3.62 *nγa ndza (nn) agəmmu / *uγ=agəmmu*
 eat with (2Sg.GEN) right / *ABS=right
 Eat with your right (hand). (2009-01-04)

⁷ *aʃəʃsi* “left”: Berber *a-* + Hass. Ar. *ʃəsr-ī* < Ar. *ʿaʃsar-* “left-handed”; so probably borrowed via Berber.

agəmmu “right”: Koyra Chiini *gum-o* “right / cheap”, *guma* “be inexpensive, beneficial”; but also cf. Zenaga *ägmaḥ* “best”, *ägmi* “become big”. The initial *a-*, at least, implies Berber influence.

Arabic ordinals have no corresponding inchoative verbs, and “left” and “right” are properties which do not normally change; thus it would have been difficult for speakers to apply the usual strategy of borrowing inchoative verbs instead of adjectives.

3.5.1.3 Adjectival

Some borrowed colour terms pass both tests for adjective status, yet take nominal predicative constructions to the total exclusion of verbal ones. These force us to postulate a syntactic category new to Kwarandzyey, with no known members of Songhay origin: nominal adjectives. These are:

Table 40.

From Arabic:		M. Ar.	Cl. Ar.
<i>(lə)xɔdər</i>	green	<i>lə-xɔdər</i>	<i>al-'axɔdər-</i>
<i>zərrig</i>	blue	<i>zɾəg</i>	<i>'azraq-</i>
<i>ħənnawi</i>	henna-coloured	<i>ħənnawi</i>	<i>ħinnā</i> “henna” + <i>-ī</i>

From Berber:
gʷəɖɾa gray cp. *agʷəɖɾa* “dust”, Td. *agadɾoɾ* “dust” < Berber

These adjectives appear in the expected position, and take the dummy nominal head *uy* like verbal ones:

3.63 *ħərrəm* *γəy.si* *ləktub* *ħənnawi=yu*
 pick up 1Sg.Dat books henna coloured=PL
 Pick up the henna-coloured books for me. (2009-01-04)

3.64 *tsbɑ* *γəy.si* *uy=ħənnawi*
 show 1Sg.Dat ABS=henna coloured
 Show me the henna-coloured one. (2009-01-05)

As seen below, however, these adjectives take the nominal predication construction rather than the verbal one.

For some of these cases, Kwarandzyey's adoption of Arabic adjectives rather than equivalent inchoative verbs may be explained by the same argument as for the nouns –

the absence of any inchoative equivalent in the source language to borrow. *ag^wəḍṛa* “dust” was a noun rather than an adjective in Berber, and Arabic has no morphological means of forming an inchoative from derived adjectives like *ḥənn-awi*; instead, analytical constructions are used:

wəlla *ḥənnawi*
 become.3MPf henna coloured
 It became henna-coloured.

However, this explanation is not tenable for Maghrebi Arabic *xḍar* “green” or *zrag* “blue”, which have the corresponding inchoative verbs *yə-xḍar* and *yə-zrag*. Moreover, it leaves unexplained the question of why these were not then borrowed as nouns.

An alternative explanation would be to note that these appear to be unusually recent loans, reflecting an expansion of the colour system that is not in evidence in Cancel (1908), where the colours are listed as:

<i>Table 41.</i>		(his transcription)	(my data)
white	blanc	qoari	<i>k^warəy</i>
black	noir	ebbibi	<i>bibəy</i>
red	rouge	tchiri	<i>tsirəy</i>
green, blue, grey	vert, bleu, gris	azzegzeg	<i>zəgzəg</i>
yellow	jaune	iara	<i>yaṛa</i>

I did not observe any disagreement among modern speakers about *g^wəḍṛa* “grey” and *ḥənnawi* “henna-coloured”, but, while almost all modern speakers feel the need to split the colour *zəgzəg* “blue/green” into two focal colours, some make *zəgzəg* “green” and *zəṛṛig* “blue”, while others make *zəgzəg* “blue” and *ləxḍar* “green”. Their lack of consensus on the choice, even within the same village and the same tribe, also suggests a quite recent change.

An adjectival word class apparently restricted to colour terms is unusual, but not unattested: Krahn (Kru) and Bafia (Bantu) both have adjective classes consisting solely of “black”, “white”, and “red” (Seegerer fc).

3.5.2 Attribution

Attribution is handled in the manner seen in the definition above, by placing an adjective in the appropriate position within the core noun phrase. Some adjectives – by no means all – have attributive forms distinct from their predicative ones, most commonly formed by adding the suffix *-əw* (cognates of which are found across Songhay), eg:

Table 42.

difficult	<i>-gəb</i>	<i>gab-əw</i>
near	<i>-mən</i>	<i>man-əw</i>
far	<i>-mɑ</i>	<i>mɑr-əw</i>
open	<i>fya</i>	<i>fyar-əw</i>
boiling	<i>nən</i>	<i>nin-əw</i>
bent, twisted	<i>sər</i>	<i>sir-əw</i>
mashed	<i>dzədʒ</i>	<i>dzudz-əw</i>
heavy	<i>-tsən</i>	<i>tsənn-əw</i>
good	<i>-hnən</i>	<i>hənn-əw</i>

A couple of irregular attributives are formed differently:

long	<i>-ku</i>	<i>kuku</i>
runny (liquid)	<i>zru</i>	<i>zruru</i>

-əw is no longer productive; speakers do not add this suffix to new Arabic loans, nor to most Songhay verbs. While a wide range of inherited Songhay vocabulary takes this suffix, and at least one Berber borrowing (*fəxs* “break someone's head” > *fəxs-əw* “broken (head)”), only two Arabic borrowings have been observed to do so; one of them displays a sound change (*r* > *l*) which is no longer productively applied to new borrowings in Kwarandzyey, suggesting that these were early borrowings, and the other, unlike most trilateral verbs borrowed into Kwarandzyey, lacks the 3rd person masculine singular prefix *i-/y-*:

yəsrəx “skin (v.)” > *sərx-əw* “skinned” (N7p)
k^wm^wəš “wrinkle, tie up (a parcel)” > *k^wmuš-əw* “wrinkled”

3.5.3 Predication

Predication – stative or inchoative – is normally handled verbally, with subject agreement prefixes and verbal mood-aspect-negation morphemes. Perfective forms are in general ambiguous between stative and inchoative readings, but adding the perfect marker *ba* (contracting to *a* when preceded by the 3rd person singular, 1st or 2nd person plural – see 7.3.2.2) typically forces a stative reading, while imperfective forms force an inchoative one, as in the following elicited examples:

3.65 *nən mu i-ttsirəy*
 2S.Gen eye 3P-red
 Your eyes became red (عينيك حماروا). (N8p110)

3.66 *kung yuna i-sə-kku*
 palm DEM.DIST 3P-NEG-tall
 Those palms are not tall (N6p50)

3.67 *nən mu i-b-tsirəy*
 2S.Gen eye 3P-IMPF-red
 Your eyes become red (عينيك يحماروا). (N8p110)

3.68 *nən mu i-ba-ttsirəy*
 2S.Gen eye 3P-PF-red
 Your eyes are red (عينيك حومر). (N8p110)

A less common alternative, however, is simply to juxtapose the attributive form (if distinct), as if it were a noun, and mark number agreement using the plural word *yu*, normally restricted to noun phrases:

3.69 *kung=yuna=yu həndza kuku=yu*
 palm=DEM.DIST=PL NEG.COP tall.ADJ=PL

Those palms aren't tall (accepted, but considered less good than the above sentence -N6p49)

- 3.70 *kung=ɣuna* *a-b-ibən* *sir.əw*
 palm=DEM.DIST 3S-IMPF-appear bent.ADJ

That palm seems bent (heard; said to be better with *a-ssər* “3S-bend”)

Similar alternatives – a verb, or *yər* “become” with an attributive form – are available for inchoative constructions:

- 3.72 *i-nnən-dza* *ddəllaḥ* *mɣad* *a-yəḥla* / *a-yyər* *yəḥla*
 3PL-drink-CAUS watermelon until 3Sg-sweet 3Sg-become sweet

They irrigated the watermelon until it got sweet (2009-01-04)

For most words, the nominal-like construction is attested only as an alternative to the normal one, and is considered less good. Both of these suggest that it is a relatively recent calque on the Arabic construction. Speakers that accept this construction could be argued to have reanalysed the attributive forms as nominal adjectives, making the verbal forms potentially superfluous. However, the fact that they still use the verbal forms in most contexts suggests otherwise.

There is also a small minority of “noun-like” adjectives – all known cases are borrowings – for which only this construction is available for predication. Excluding ordinals and direction terms – argued previously to be nouns – the only cases confirmed so far are the colour terms borrowed from Arabic, as well as the derived denominal Berber colour term *gʷədrə* “gray” (< “dust”). Stative and inchoative predication for these is handled with the appropriate nominal constructions, rather than the verbal ones:

- 3.73 *səndza* *ḥənnawi* (**a-s-ḥənnawi*)
 NEG.COP henna coloured (**3S-NEG-henna coloured*)

It's not henna-coloured. (N8p165)

- 3.74 *səndza* *lxḍər ana* (**a-s-ba-ləxḍər*)
 NEG.COP green 3SEmph (**3S-NEG-PF-green*)

It's not green.

- 3.75 *tsəxsəbts=γu kʷarəy ana, həndza gʷədrə*
 abaya=DEM white 3SEmph, NEG.COP grey
 This abaya is white, not grey. (N8p164)

Contrast the non-Arabic colour terms, for example:

- 3.76 *an ifəw a-zzəgzəg*
 3S.Gen leaf 3S-green/blue
 Its leaf is green. (N5p30)

The ordinals were argued previously to be nouns, and as expected they too take these constructions:

- 3.77 *iz=dz həndza ana lluwwəl, ana zzawəj*
 child=DEM NEG.COP 3S first, 3S second
 This kid isn't first, he's second. (N8p164)

A similar phenomenon is attested in Yoruba, where adjectival predicates are normally verb-like and hence do not take a copula, yet English borrowed adjectives often do take the copula *wa*, normally used with nominal predicates (Amuda 1986:411; via Winford 2003:133).

3.5.4 Comparison

As in Berber and Algerian Arabic, of at least one of which it undoubtedly constitutes a calque, comparison to another object may be expressed by adding “on”, =*ka*, to that NP, eg:

- 3.78 *ini i-bya=γəy.ka*
 3PEmph 3P-big=1S.LOC
 They're bigger than me. (N5p212)

bsa “pass, surpass” and *hən* “be stronger than, capable of beating” are also used to form comparatives, but have a wider use than *ka*, being also used to express the idea of “more” with non-stative verbs:

- 3.79 *a-nnəṣ a-bbsa-γəy* = *a-nnəṣ a-hhən-γəy* = *a-nnəṣ=γəy.ka*
 3S-fat 3S-pass-1S = 3S-fat 3S-beat-1S 3S-fat=1S.Loc
 He's fatter than me (N6p108)

Equivalent Berber constructions are widely attested, whereas in Songhay such constructions are limited to the heavily Berber influenced Northern branch; this should therefore be taken to derive from Berber influence.

“Better”, as in other Songhay languages, is expressed in a *sui generis* manner, using the inherited Songhay verb *bəy* “be better than”. Eg:

- 3.80 *a-bbəy šwingum*
 3S-better gum
 It's better than gum. (N2p26)

Superlatives are not strongly grammaticalised; they may be expressed with a focus construction:

- 3.81 *kʷəll əlmən-kʷəy i-kku, bəṣṣəḥḥ ʕan bə hən an=á kku*
 all German 3P-tall but 1S.Gen friend Hans 3S=FOC tall
 All Germans are tall, but my friend Hans, it's him that's tall (ie the tallest).
 (N6p106)

or with an absolute form, using a genitive construction if desired to express the comparanda:

- 3.82 *kʷəll alman-kʷəy i-kku, bəʃʃəħħ ʕan bə hɑns in uy=ku*
 all German 3P-tall but 1SGen friendHans 3SgGen ABS=tall
 All Germans are tall, but my friend Hans is the tall one (ie the tallest). (N6p106)

- 3.83 *əgga=γi in uy=kedda-bbunu*
 PAST=1S 3P.Gen ABS=small-tiny
 I was the tiniest of them (2007-12-06/AM)

3.5.5 Deadjectival nouns

The productive means of forming deadjectival abstract nouns, unsurprisingly given the overall tendency for adjectives to behave as verbs, is the same as for deverbal nouns (see Verbs): the bare (predicative) stem is the head of the noun phrase, and the noun phrase appears with the plural marker *yu* unless the abstract noun in question is countable (eg “a hit”). Thus:

- 3.84 *an yəħla=yu ħar tsammʷənts*
 3S.Gen sweet=PL like honey
 Its sweetness is like honey. (2008-01-01/09)

This is clearly based on the inherited Songhay method. Occasional instances of abstract nouns being borrowed from Arabic as separate items, such as *ləflaħəts* “farming”, have been observed; so far, however, no deadjectival ones have been noted.

3.6 Conclusions

The difference between our two languages of comparison in this field are striking. Both languages have borrowed substantial numbers of adjectives, though Siwi more so than Kwarandzyey. But whereas every aspect of adjectives in Siwi except the agreement morphology either coincides with or derives from Arabic, Arabic and Berber influence on Kwarandzyey adjectives is limited to the development of a small class of nominal adjectives and to the syntax of comparative constructions. Grammatical factors appear

to play an important part in this:

1. *Word class congruence.* Adjectives are not a cross-linguistically homogeneous word class; some languages treat adjectives more like nouns, others more like verbs. Throughout northern Berber at least, nominal adjectives constitute a significant word class, and are stative only – just as in Arabic, rendering the adaptation of Arabic adjectives easy. But in Songhay, judging by the available grammars, all adjectives are verbal, and do not have distinct stative and inchoative forms; thus Arabic verbs were adopted in preference to adjectives wherever possible, and failing that even Arabic nouns, while some of the most recent adjectival loans have effectively led to the creation of a new word class. Both the fact that Kwarandzyey borrowed inchoative verbs wherever possible, rather than simply treating Arabic nominal adjectives as verbs, and the fact that adjectives with no corresponding inchoative were borrowed either as nouns or into a new syntactic category of nominal adjectives, reinforce the impression – confirmed by other points to be examined, such as the behaviour of adpositions – that lexical borrowing in contexts of widespread bilingualism preferably copies not just phonological properties of the borrowed item but syntactic ones, even when the latter are at variance with those expected for the host language.

2. *Templatic structure.* Berber, like Arabic, regularly uses internal vowel change and the imposition of specific vowel templates as a morphological process, and, like Arabic, its adjectives are very commonly trilateral; this made it easier to make Arabic comparative and deadjectival formation strategies productive. Songhay, by contrast, has no internal vowel change processes (and, indeed, no non-tonal morphological processes affecting the interior of a stem), and most Songhay adjectives do not fit an Arabic root-pattern structure. The fact that some of the Arabic dialects around Tabelbala have lost productive morphological comparatives, unlike the dialects of Egypt and Libya, may have reduced the odds of Kwarandzyey adopting this; but these dialects still have templatically formed deadjectival nouns, which have likewise become productive in Siwi but not Kwarandzyey. This point is further confirmed by causatives (below.) The examples of Nafusi, Zuara, and Domari suggest a historical process, whereby first adjectives are borrowed, then the use of Arabic comparative forms (formed regularly

from borrowed adjectives, but suppletive relative to the inherited ones) becomes systematic, then – if and only if enough native adjectives have an appropriate triliteral shape – the relevant template is generalised to native adjectives. This differs from the borrowing of Arabic plurals (see Noun) principally in introducing a new category to the recipient language's grammar. However, the general process – productivity of borrowed templates occurring as a result of generalising borrowed base form – derived form pairs – appears likely to account for all template borrowing.

4 Numerals and other quantifiers

Numerals constitute an unusually well-defined semantic class, but need not constitute a syntactic one; in different languages, they may behave like adjectives, determiners, nouns, or have different syntactic behaviour depending on the number's size. In both the languages under discussion, Arabic borrowings predominate, both in numbers and in measures; only a few low numbers are preserved, and with some measures even those are not used. However, the syntax of counting is less heavily Arabised. Since ordinals are largely derived from cardinals, their morphology will be discussed briefly here, but ordinals are adjectives in Siwi and nouns in Kwarandzyey, and their syntax will be described in those chapters.

Count nouns – nouns which may be used to refer to individual entities, but not to subparts of those entities – are naturally modelled by integers. Viewing countable mutually similar units as parts of a larger whole yields fractions. Mass nouns – nouns which may be used to refer to any subpart of their referents - can be modelled to arbitrary levels of accuracy by counting measures – nouns referring to fixed amounts of the mass noun. Both these concepts extend naturally to predicates: a punctual predicate not applicable to temporal sub-sections of itself (eg *break a glass*) is countable, while a durative one applicable to temporal sub-sections of itself (eg *wait*) may be measured in temporal periods, such as days or years. Duration, however, differs from physical measure in that multiple measures of it cannot be perceived simultaneously; as such, it need not necessarily be modelled as a measure (with cardinals), rather than a sequence (with ordinals), and in some languages the former model is not used, including Hopi (Whorf 1956:139) and probably traditional Oceanic-speaking societies (M. D. Ross 1998:288).

Specific times (usually within a cycle) may be identified numerically by measuring the duration elapsed since a particular event, yielding clock time, days of the week, days of the month, months, and numbered years. Of these, clock time and numbered years are not a significant part of traditional oasis society, but have become important more recently with bureaucratisation; on the other hand, days of the week, and certain

months, are important for religious purposes. Despite formal semantic similarities, month names in the societies in question are not related to numeral words, and hence will not be dealt with here.

Other quantifiers are semantically and grammatically more heterogeneous, representing ways of looking at quantity other than in terms of countable units. Words such as “few” or “many” provide a fuzzy rather than a well-defined measure of quantity, and as such are in complementary distribution with numerals for count nouns; others, such as “all” or “most”, measure quantity relative to the whole set under discussion (whether it is taken to consist of countable elements or not), and as such may permit combination with numerals. Nonetheless, in the languages under discussion the universal quantifier “each/every” appears rather more similar to numerals in its syntax than most fuzzy quantifiers. Indefinite markers often derive from the number “one”, but the markers for existential variables tend to be less syntactically similar to numerals.

4.1 Siwi

4.1.1 Numeral forms

4.1.1.1 Integers

Siwi has retained inherited Berber words for “one” and “two”, as illustrated by the comparative table below:

<i>Table 43.</i>	one m.	one f.	two
Siwi	<i>əjjən</i>	<i>əjjət</i>	<i>sən</i>
Nafusi (Beguinet 1942)	<i>úġun</i>	<i>úġut</i>	<i>sen</i> (m.)
Kabyle	<i>yiwən</i>	<i>yiwət</i>	<i>sin</i> (m.)
Figuig (Kossmann 1997:207)	<i>(y)idjən</i>	<i>yišš/yišt</i>	<i>sənn</i> (m.)

“One” is the only number to display productive gender agreement (though historic Arabic gender agreement morphology has been retained in the set of bound numerals used with measure words – see below.) Laoust (1931) reports that “two” had also retained a feminine *sənət*, but this may have been a misinterpretation. He gives the

example of *sənət təltāwin* “deux femmes” (*ibid*:226), but since the genitive particle is normally required to link “two” and higher numbers to their noun phrases, this should have been **sənt n təltawen*; I suspect Laoust, guided in his expectations by previous work with Moroccan dialects which do have feminine forms for “two” ending in *-t*, misanalysed the initial *t* characteristic of feminine nouns as being included in the numeral.

The original Berber number system featured gender agreement on numbers, and other Berber languages which have retained “two” retain gender agreement on it. Classical Arabic also had gender agreement on most numbers, and nearby Bahariya has retained it for “two” as well as “one” (Drop & Woidich 2007:92). However, most modern dialects of Arabic – including, in particular, both the adjacent Cyrenaican Bedouin dialect (Owens 1984:53) and the modern Cairene Arabic superstratum (Abdel-Massih 2009) – have lost gender agreement on all numbers except one, just as Siwi has. Given the level of Arabic influence on the Siwi number system, it is plausible to regard influence from such a dialect as a factor contributing to this morphological simplification.

As in other Eastern Berber languages, all higher integers are Arabic, as noted by Laoust (1931:106) and Vycichl (2005:213):

<i>Table 44.</i>		Cairene:		
	Normal forms	Bound forms (see under “Measure words”)	Normal	Bound
1	<i>waḥəd</i> (in 21+)		<i>wāḥid</i>	
2	<i>tneṅ</i> (in 21+)	(-en)	<i>itnēn</i>	(-ēn)
3	<i>tlata</i>	<i>təlt</i>	<i>talāta</i>	<i>talat</i>
4	<i>aṛbaʕa</i>	<i>aṛbaʕ(t)</i>	<i>aṛbaʕa</i>	<i>aṛbaʕ</i>
5	<i>xəmsa</i>	<i>xəməs(t)</i>	<i>xamsa</i>	<i>xamas</i>
6	<i>sətti</i>	<i>sətt</i>	<i>sitta</i>	<i>sitt</i>
7	<i>səbʕa</i>	<i>sbaʕ(t)</i>	<i>sabʕa</i>	<i>sabaʕ</i>
8	<i>tmanyā</i>	<i>təmn</i>	<i>tamanyā</i>	<i>taman</i>
9	<i>təsʕa</i>	<i>tsaʕ(t)</i>	<i>tisʕa</i>	<i>tisaʕ</i>
10	<i>ʕašʕa</i>	<i>ʕašʕ(ət)</i>	<i>ʕašʕa</i>	<i>ʕašʕ</i>
11	<i>ḥdaʕš</i>	<i>ḥdašəʕ</i>	<i>ḥiḍāšəʕ</i>	
12	<i>ṭnaʕš</i>	<i>ṭnašəʕ</i>	<i>itnāšəʕ</i>	
13	<i>tləttāš</i>	<i>tləttāšəʕ</i>	<i>talattāšəʕ</i>	
14	<i>aṛbaʕtāš</i>	<i>aṛbaʕtāšəʕ</i>	<i>aṛbaʕtāšəʕ</i>	
15	<i>xəmsʕāš</i>	<i>xəmsʕāšəʕ</i>	<i>xamsʕāšəʕ</i>	

16	<i>səttəš</i>	<i>səttəšəʔ</i>	<i>sittāšar</i>	
17	<i>sabʕtaš</i>	<i>sabʕtašəʔ</i>	<i>sabaʕtāšar</i>	
18	<i>tmənʕtaš</i>	<i>tmənʕtašəʔ</i>	<i>tamanʕāšar</i>	
19	<i>tʕaʕtaš</i>	<i>tʕaʕtašəʔ</i>	<i>tisaʕtāšar</i>	
20	<i>ʕəšrin</i>		<i>ʕišrīn</i>	
30	<i>tlatin</i>		<i>talatīn</i>	
40	<i>aʕbʕin</i>		<i>arbiʕīn</i>	
50	<i>xəmsin</i>		<i>xamsīn</i>	
60	<i>səttin</i>		<i>sittīn</i>	
70	<i>səbʕin</i>		<i>sabʕīn</i>	
80	<i>tmənyin</i>		<i>tamanīn</i>	
90	<i>təʕʕin</i>		<i>tisʕīn</i>	
100	<i>miyya</i>	<i>miyyət</i>	<i>miyya</i>	<i>mīt</i>
1000	<i>alf</i>			

The only notable peculiarity from an Arabic perspective among these is the *-i* in *sətti*, found in Western Delta (Bihera) dialects but nowhere else in North Africa, which uses variants of *sitta* (Mörth 1997:241). The value of this isogloss is limited, since in Bihera *-a > -i* also applies to “three”, “five” (*ibid*), and feminine nouns in general. The loss of *-ar* in 11-19, and its reappearance in bound forms, differs from Cairene but parallels Cyrenaican Arabic (Panetta 1943:162). With the current near-universal bilingualism, the forms of these numbers show further convergence towards Arabic. For example, some speakers pronounce the etymological *θ* in place of *t* in “two”, “three”, and “eight” and their derivatives, as in Cyrenaican Arabic, although *θ* is normally absent from Siwi phonology. Similarly, some speakers substitute more Cairene-like forms with undeleted short vowels, like *talāta* for “three”, or substitute pan-Arabic *sətta* for *sətti* “six”.

Multiples of “hundred” or “thousand” are formed with the bound forms (see “Measure words” below.) Other numbers are formed additively with the Arabic word *u* “and”, not normally used otherwise in Siwi. The order is as in Arabic: thousands – hundreds – ones – tens.

The distinct bound forms' use, rather different from Cairene Arabic (where they are used in general when the number precedes the noun), is described below under “Measure words”. The bracketed *t* of 4, 5, 7, and 9 appears only with certain nouns, notably “day” (see below.) In Cairene Arabic, this *t* appears in certain contexts (notably counting days) as a linker after all numbers 3-10; it derives ultimately from the Classical Arabic

masculine forms, otherwise lost, but has a different distribution.

All ordinals are borrowed from Arabic, as first attested in Laoust (1931). Masculine forms are: *llawwəl* / *uwwəl-uwwəl* “first” < Cl. *'awwal*, *ttani* “second”, *ttalət* “third”, *ṛrabaṛ* “fourth”, *lxaməs* “fifth”, *ssatət* (or “corrected” Arabic *ssadəs*) “sixth”, ... *ṣašəṛ* “tenth”. Feminine forms add *-a*, except that *uwwəl-uwwəl* is invariable. Above ten, there are no distinct ordinal forms; instead, relative phrases are used, sometimes with reduplication of the number:

- 4.1 *tálti tən ḥdáš-ḥdáš, tálti tn ámkan waḥəd u-ṣašrin*
 womanREL.F eleven-eleven, womanREL.F place one +20
 the eleventh woman, the twenty-first woman (2008-08-03/255)

These are adjectives, not nouns, as shown by their agreement with inanimates:

- 4.2 *təṭṭ taltá g əmməşṛəb ta-zəggax-t*
 spring third in road FSg-red-FSg
 The 3rd spring on the road is red. (2009-10-26, phone)

4.1.1.2 Fractions

“Half” is inherited *azgən*; it has a corresponding verb *zgən* “divide in half.” The Arabic equivalent *nəşş* is used as a bound form, and in certain other contexts. Other fractions are borrowed from Arabic; only *ttəlt* “third”, *ṛəbṣ* “quarter”, and *ttməṇ* “eighth” are attested. $X - (1/N)$, for $N > 2$, may be expressed as $X əlla (1/N)$, using the Arabic loan *əlla* < *'illā* not otherwise attested in Siwi.

4.1.1.3 Interrogative

The interrogative of quantity is inherited *mnet* “how much?”, often combined with prepositions (eg *sá-mnet* “for how much?”). Its bound equivalent is Arabic *kam*.

4.1.1.4 Cryptic numerals

The Arabic numbers are inconveniently easy for Arabs to understand. When secrecy is desired, compounds using exclusively Berber vocabulary may thus be used. For small numbers, these are based on hands and fingers, as noted by Laoust (1931:107). The forms I recorded were:

<i>Table 45.</i>		
<i>sán d əjján</i>	“two and one”	three (N1p284)
<i>sán d sán</i>	“two and two”	four (N1p284)
<i>fus</i>	“hand”	five (N2p63)
<i>fus d əjján</i>	“hand and one”	six (N2p63)
<i>fus d sán n itudan</i>	“hand and two fingers”	seven (N2p105)
<i>sán n ifässən</i>	“two hands”	ten (N2p105)

For higher numbers, references to the colour of bank notes (presumably recent) may also be used:

<i>Table 46.</i>		
<i>tazəggaxt taħəkkəkt</i>	little red	ten (N2p105)
<i>tawṛaxt</i>	green	twenty (N2p105)
<i>tazəggaxt tazuwwart</i>	big red	fifty (N2p105)

Less heavily Arabised dialects of Berber, notably Tashelhiyt, Zenaga, and Tuareg, still retain a number system without Arabic loanwords; this system is base 10, not base 5, and does not use “hand” to mean “five”. This system of cryptic number words is therefore not a limited retention, but rather an innovative response to a problem caused by the borrowing of Arabic numbers in combination with continued contact with Arabic. However, the fairly obvious technique used for encoding 2-10 here is widespread in the Sahara; nearly identical systems with identical motivations exist in Nafusa (Beguinot 1931:121), El-Fogaha (Prasse 1996), and – as will be seen below – Tabelbala. In fact, Brahui, a Dravidian language of Pakistan which has borrowed all numbers above 3 from the surrounding Indo-Iranian languages, has – presumably independently – developed a method of forming cryptic number words based on fingers and hands, similar to Siwa and exactly as in Tabelbala (Andronov 2001:49), confirming the naturalness of this response to number borrowing.

4.1.1.5 Measures

All known Siwi words referring to measures are borrowings, from or via Arabic. The grammar of quantification for these has been affected correspondingly, and differs significantly from that used with nouns.

4.1.1.5.1 Duals

The most prominent difference between measures and other count nouns is that measures alone can have duals formed with the suffix *-en* from the stem minus the Arabic article or the Berber gender/number markers, rather than using *sən* “two”. This feature has been present for some time: examples in Laoust (1931) include *sənt-^ain* “year-DUAL” (*ibid*:174), *uaggat-^ain* “ounce-DUAL” (269), *šahar-in* “two months” (175).

Some measures have duals, but otherwise behave like normal nouns. Thus *rəkʃa* “rakaas, a unit of prayer” has a dual *rkaʃten*, but higher numbers go *tláta n tɪrəkʃá* “three rakaas”, *árɓʃa n tɪrəkʃá* “four rakaas”, with the genitive linker and a Berber-style plural; likewise *twaggət* “oke (unit of weight)”, dual *waggəten* (note the absence of the Berber feminine prefix *t-*), then *tláta n tiwägga*. *frinu* “2½ piastres (obsolete)” appears not to have a dual; but its disuse makes speaker intuitions uncertain.

4.1.1.5.2 Measures that behave like Arabic normal count nouns

All measures of time examined, along with some other units, go further than the above. With these measures, in addition to using a dual in place of “two” as described above, the following characteristics (noted by Laoust (1931:106) for the word “day” only, and by Vycichl (2005:215) also for the word “time”) apply:

1. 3-10 are expressed by the bound forms listed above rather than the full forms, take no genitive linker, and are followed by a plural form without a reflex of the Arabic article. Depending on the measure (see table below), a *t* linker may

appear with 4, 5, 7, 9, and 10. Eg:

- 4.3 *yə-tbáqqa* *sətt əšhúr, yə-flá-ya* *sətt əšhúr*
3MS-remain.INT six.C months3MS-depart-PF six.C months

Six months remain, and six months have passed. (2009-06-17)

- 4.4 *əmqás* *n* *səbf-ət* *snín*
measure GEN seven.C-t years

A measure of seven years (Yusuf/249)

- 4.5 *sbaʕ-t* *iyyam, tsaʕ-t* *iyyam, ʕašr-ət iyyam,*
seven.C-t days nine.C-t days ten.C-t days

seven days, nine days, ten days (2009-06-17)

- 4.6 *sbúʕ-en,* *tált sbuʕát,* *sətt sbuʕát, ʕašər-t sbuʕát*
week-DUAL three.Cweeks six.C weeks ten.C-t weeks

two weeks, three weeks, six weeks, ten weeks (2009-06-17)

- 4.7 *allélət ájjət, xəməs-t* *əlyáli*
night one.F five.C-t nights

one night, five nights (2009-06-17)

- 4.8 *təlt iyyam na* *árbaʕ*
three.Cdays or four

three or four days (2008-05-07/0322)

- 4.9 *šəhr-én,* *təlt šhúr*
month-DUAL three.Cmonths

two months, three months (2009-06-17)

2. 11 and above are expressed by the bound forms listed above where separate ones exist, take no genitive linker, and are followed by a singular form without any

reflex of the Arabic article, substituting *-a* for feminine *-t* where relevant, eg:

- 4.10 *xəmsťášəř* *sná*
fifteen.C year
fifteen years (2009-06-18)
- 4.11 *təlťťášəř* *yom, tláta wšařín yóm*
thirteen.C day three +20 day
thirteen days, twenty-three days (2009-06-17)
- 4.12 *tləťťášəř* *sna, tláta wšařín sna*
thirteen.C year, three +20 year
thirteen years, twenty-three years (2009-06-17)

Units of time or measure displaying this behaviour include:

Table 47.	sg. (~pl.)	du.	w/ 3-10 (~sg.)	with >10	pl. (w/o no.)	-t?
minute	<i>dgigət</i>	<i>dgigten</i>	<i>dgayəg</i>	<i>dgiga</i>		Ø
hour	<i>ssaťət</i>	<i>saťten</i>	<i>saťat</i>	<i>saťa</i>		Ø
day	<i>nnhař</i>	<i>yum^wen</i>	<i>iyyam</i>	<i>yom</i>	<i>liyyam</i>	<i>t</i>
night	<i>llelət</i>	<i>lelten</i>	<i>lyali</i>	<i>lela</i>	<i>llyali</i>	<i>t</i>
week* ⁸	<i>ssbuť</i>	<i>sbuťen</i>	<i>sbuťat</i>	-		<i>t</i>
month	<i>ššhəř</i>	<i>šəhřen</i>	<i>šhuř</i>	<i>šhəř</i>	<i>lašhuř</i>	
year	<i>ssənt</i>	<i>sənten</i>	<i>snin</i>	<i>sna</i>	<i>ləsnin</i>	<i>t</i>
time	<i>mařra</i>	<i>mařrten</i>	<i>mařrat</i>	<i>mařra</i>	<i>lmařrát</i>	Ø
riyal	<i>ryal</i>	<i>riyalen</i>	<i>ryalat</i>	<i>ryal</i>	<i>riyaliyyən</i>	Ø
cubit	<i>drať</i>	<i>draťen</i>	<i>druť</i>	<i>drať</i>		<i>t⁹</i>
hundred ¹⁰	<i>miyya</i>	<i>miten</i>	(<i>mya</i>)	-	<i>ləmyat</i>	Ø
thousand	<i>alf</i>	<i>alfen</i>	<i>alaf</i>	<i>alf</i>	<i>luluf</i>	<i>t</i>

A nice contrastive pair is provided by *ssaťət*, an Arabic borrowing with the two meanings “hour” or “watch”; contrast:

- 4.13 *əhďášəř* *sáťa* vs. *hďáťš n* *ssať-iyyát*

⁸ In practice, weeks are not normally used to count spans of greater than 3 weeks.

⁹ N1p231: *xəməst ədruť* - width of a date-drying yard (*alhoš*).

¹⁰ 3-9 hundred irregularly use a singular form in Arabic; >9 are counted in thousands.

eleven.C hour eleven GEN watch-PL
 eleven hours vs. eleven watches (2009-06-18)

Similarly, the plural forms used with 3-10 often differ from those used without numbers; for example, in combination with a number the plural of “day” is *iyyam*, but without a number it is *liyyam*, with a reflex of the Arabic article:

4.15 *liyyam dá-wi-yyok* *γúr-wən* *t-γammam* *kom.*
 days MOD-DEM.PL.2:M at-2P 3F-cloudy.INT much
 These days it's very cloudy in your country. (2009-06-25)

For some measure words, even “how many” is consistently handled with Arabic *kam* followed directly by a singular and substituting *-a* (the normal Arabic feminine ending) for *-t* (which is both the Arabic feminine ending used in the construct state and the Berber feminine ending):

4.16 *kam* *sna* *γur-ək?*
 how many.C year at-2S
 How many years old are you? (2009-06-18)

4.17 *kám* *sáʕa* *ngr-át* *səbr-át-a?*
 how many.C hour stay-2S wait-2Sg-PF
 How many hours did you keep waiting? (2009-06-18)

But others take *mnet*:

4.18 *ájneh* *ámnet* *n* *riyyál-iyyən*
 pound how many GEN riyal-PL
 How many riyals is a pound? (2009-06-18)

4.19 *bat-át-a* *ámnet* *n* *llyáli* *g* *mátruħ?*
 spend night-2Sg-PF how many GEN nights in Matrouh

How many nights did you spend in Matrouh? (2009-06-18)

Similar variation is observed with “half”:

4.20 *azgán n ssánt*
 half GEN year
 half a year (2009-06-17)

4.21 *náşş twaggát*
 half oke
 half an oke (2009-06-17)

In Arabic, all the syntactic features that single out these measure words apply to most nouns, not just to this subset. Compare Cairene (Abdel-Massih 2009:175):

<i>walad-ēn</i> (boy-DUAL)	two boys
<i>talat riggāla</i> (three man.PL)	three men
<i>xamaşṭāşar walad</i> (15 boy.SG)	fifteen boys

In other words, these measure words can simply be regarded as taking Arabic syntax.

On the other hand, an important difference with modern Egyptian dialects appears in the form of the numbers. For numbers 3-10, the suffix *-t*, which in Classical Arabic occurs when the number modifies a masculine noun, has been reanalysed in Cairene and Bahariyya Arabic as part of the following noun, and appears only when the following noun is a plural of the form *aCCāC* or *aCCuC*. In Siwi, the reanalysis has proceeded in a slightly different direction, having been made relevant only for the count forms of 4, 5, 7, 9, and 10; thus in Siwi we have forms like *ʕaşṣart sbuʕát* “ten weeks”, which in Cairene would appear without a *-t*. The short vowels have also been deleted or reduced in accordance with Siwi phonology, in a manner not otherwise found in Egypt.

The short forms of numbers 3-10 are used for counting most nouns in Arabic dialects of

Egypt and western Libya, and can be used for many non-measure nouns as far west as Tunisia (Singer 1984:611). However, further west in Morocco and Algeria, the equivalents of these short forms are used, as in Siwi, only with certain measures, especially of time. This may be the result of independent parallel development; however, the Arabic dialect that influenced Siwi most strongly cannot be identified with any extant one, and probably represents a stratum of Arabic largely replaced in the Western Desert by later Bedouin immigration (Souag 2009). It is thus possible that this restriction took place in early western Arabic, rather than in Siwi.

This part of the grammar seems to straddle the boundary between syntax and morphology. It brings to mind the use in Korean and Japanese of borrowed Chinese numerals in combination with borrowed Chinese counters; but there the two are simply combined, whereas here the situation is rather more complicated. Closer analogies are reported in the Amazon, such as Tariana speakers' consistent use of Portuguese numerals to count money and time (Aikhenvald 2002:202), or the use of unanalysed Portuguese expressions consisting of numeral + unit in Hixkaryana, eg *uma keru* “one kilo” vs. native *towenyxa* “one”, *dusentus kerus* “200 kilos”; but in the latter the native numeral terms, limited to at most five, appear to be inherently imprecise (Derbyshire 1979:101, 104, 155). In any case – as will be seen below – this regionally common phenomenon is paralleled in Kwarandzyey, as in Djenné Chiini with French numerals (Marchand 2009:213).

4.1.1.5.3 Measures that behave like Arabic special count nouns

Some of the most recent borrowed measures have no plural or dual, notably *žneh* “pound (currency)”, *kilu* “kilogram”. These borrowings take the Arabic word *tneñ* “two” rather than Siwi *səñ* or dual *-en*, and the Arabic word *səttā* “six” rather than its more integrated Siwi version *sətti*. Eg:

- 4.22 *s ərbəst -aláf žine*
 with four thousand pound
 for four thousand pounds (N3p7)

- 4.23 *kúll lxátəm g áddəkkan dawók i-tərrəħ s əθnén žnéh*
 every ring in shop Dem.M.2:M 3MS-go.INT for twopound
 Every ring in that shop costs E£2. (2009-06-18)

Unlike the measure words above, these correspond to a grammatically relevant subclass of nouns in modern Cairene: singular count nouns, including *ginēh* “pound” and *kilu(grām)* “kilogram” (Abdel-Massih 2009:184). These words are invariably singular after a numeral, and take no dual, just as in Siwi.

4.1.1.6 Absolute time specification

Clock times – another comparatively recent introduction to the oasis – do not take a measure, but likewise are expressed with Arabic numbers throughout, even for “one” and “two”, eg:

- 4.24 *láṣṣar g šal-īwən dawīdin i-táddən af tnén - af tláta*
 Asr in country-PL Dem.Dist.Pl 3M-call.INT on two - on three
 In those countries Asr is called at 2:00 – at 3:00. (2009-06-27)

Years are expressed in Arabic, unsurprisingly as all years in normal use are much greater than 2.

Days of the week are all Arabic borrowings: *ssəbt* “Saturday”, *lhədd* “Sunday”, *ltnen* “Monday”, *tlat* “Tuesday”, *larbaṣ* “Wednesday”, *lxmis* “Thursday”, *ljmət* “Friday” (N1p218.) Sunday-Thursday are transparently related to the Arabic numerals 1-5, and hence Tuesday-Thursday are transparently connected to the Siwi numerals 3-5.

4.1.1.7 Non-numerical quantifiers

Among the fuzzy quantifiers, borrowings and inherited forms coexist for both points on the scale, with some degree of differentiation between the two. The universal

quantifiers are entirely Arabic in origin, but from two quite different sources. “Much”, “all”, and “a bit” are all based on Arabic nouns. Despite this plethora of borrowings, there is no strong evidence for Arabic syntactic influence in this domain.

4.1.1.7.1 Fuzzy amount quantifiers

dabb is used, mainly adnominally, for “much, many, a lot”; it follows the noun phrase:

4.25 *díy ihəddadiyyən dább*
 EXIST blacksmith.PL much
 There are many blacksmiths. (2008-04-25/215)

4.26 *γúr-əs ššǝár dább*
 at-3S hair[MASS] much
 He has a lot of hair. (2009-06-24/a)

This does not appear to be an Arabic borrowing; it may be compared to Tahaggart Tuareg *dáb* “vraiment” (Naït-Zerrad 1998:s.v. DB 7) and perhaps *adābu* “pouvoir (faculté de faire)” (*ibid*, s.v. DB(T).)

kom is primarily adverbial:

4.27 *ám̄ma-s a-ħákkik a-ṭwíl kom*
 brother-3S M-small M-tall much
 His little brother is very tall. (2008-08-03/242)

However, it can act as an NP in its own right:

4.28 *ddənyət tá-t-ok a lámi:n, γúr-əs kóm γúr-əs ədrus*
 world MOD-Dem.F-2:M oh Lameen at-3S much at-3S few
 This world, Lameen, it contains (so) much and (yet so) little. (2009-06-25/a)

- 4.29 *ččí-ṭ-a kom dágyaṭ nnáddūm-aṭ w-ok əlwəswás*
 eat-2S-PF much by night sleep-2S DEM.M-2=M nightmare
 You have eaten too much at night and slept, that is a nightmare. (2008-08-03/248)

Adnominally, it seems to occur mainly with deverbal or deadjectival nouns, again following the noun phrase:

- 4.30 *əljəmb yúr-əs əzzɤafət kóm*
 side at-3S blackness much
 The side has a lot of blackness. (2008-04-27/223)

As Vycichl (2005) notes, *kom* presumably derives from the Egyptian Arabic noun *kōm* “heap, mound”; for a comparable grammaticalisation, consider American Pidgin English “heap big” = very big. This development is shared with the Egyptian oasis of Dakhla, for which Behnstedt and Woidich (1985) record *bil-ka:wm* “sehr”. Its postnominal position agrees with *dabb*, and both agree with Siwi's nearest relative, El-Fogaha, which has retained the Berber adjective *ggut-ən* (m.pl.) / *-nət* (f.pl.), eg *amâren ggûten* “molti uomini” (many men); so there is no motivation to postulate syntactic borrowing accompanying the borrowing of this word.

Exclusively adverbial is the probably more recent Arabic borrowing *xaləš* “extremely”, familiar from Cairene Arabic:

- 4.31 *yə-n-ḏlīm-a xaləš*
 3M-PASS-wrong-PF extremely
 He has been extremely wronged. (2009-06-23/a)

At the opposite end of the scale are the inherited *drus* “scarce, little, few” (comparative *drəs* “less”, causative *sə-drəs* “make less”, abstract noun *ddrasət* “scarcity”), agreeing with its referent in number but not gender, and borrowed *ḥəbba/ḥibba* “little, not much, a bit”. The former is only used predicatively:

4.32 *šakk zdát-ək ləsnín i-waʕr-ən, zʒraʕ gád-sən drús-a*
 you before-2M years PL-difficult-PL grain in-3P scarce-PF
 You, before you are difficult years, in which grain will be scarce. (2008-08-03/248)

4.33 *tikli-nnəs drus-a... y-uʕín-a, ačču-ənnəs bídu drús-a*
 walking-3SGen scarce-PF 3M-ill-PF eating-3SGen also scarce-PF
 His walking is scarce... he is ill, his eating is also scarce. (2009-06-27)
 (more natural English: He doesn't walk much; he is ill, he doesn't eat much either.)

The latter is used adverbially (with reduplication in the sense of “step by step”):

4.34 *g-y-ənfu əljəmət ga-nə-kkər bádri ħəbbá*
 IRR-3M-benefit Friday IRR-1P-rise early bit
 It will be beneficial on Friday to get up a bit early. (2009-06-19/a)

4.35 *d əzzəman ħəbba -ħəbba yə-ħkək*
 with time bit-REDUP 3M-get small
 With time he got smaller little by little. (2008-08-03/242)

or as a nominal head, with the entity quantified over implied:

4.36 *əlmu'táməʔ yūr-əs ħəbba i-kətr-ín-a af žlán n isi- n amaziyiʔ*
 conference at-3S bit 3-bring-PL-PF on speech GEN Si[wa]-GEN Amazigh
 The conference, does it have some [people] who have brought [papers] on Siw-
 on Tamazight? (2009-06-25/a)

or adnominally, appearing, like numbers, as the head of a genitive construction:

4.37 *af-ənni niš dilla məʔruħ, dí ħəbba n ttráwət*

on-COMP I M.LOC Matrouh EXISTbit GEN coolness
 When I was in Matrouh, there was some cool weather. (2009-10-13)

4.38 *də áyd-i ħabba n tigúrgaʕ [sic] n azámmur*
 and bring-1SgDat bit GEN sticks GEN olive
 And bring me some olive sticks. (2002-03-18/Ogress)

4.39 *yusánd ħabba n i-šiniyy-ín y isíwan...*
 3.come.PL bit GEN MPI-Chinese-Pl to Siwa
 A few Chinese people came to Siwa... (2009-06-21/b)

ħabba, originally “grain”, is used in this sense (“ein bisschen, ein wenig”) elsewhere in Egypt, notably in the Western Delta and Kharjah (Behnstedt & Woidich 1985). El-Fogaha has the non-Arabic *kéndu* “poco”, used likewise in the genitive construction: *kéndu n taġêri* “un po' di pane” (a little bread). The syntax of this expression thus equally corresponds to expectations based on its derivation from a noun and on the likely behaviour of the word it replaced.

4.1.1.7.2 Universal quantifiers

nnuba “all”, probably from the Classical Arabic noun *nawb-at-* “assembly, company, troop, congregated group of men” but not attested in an appropriate sense elsewhere in Egypt (Behnstedt & Woidich 1985), is primarily an adverb; it is not clear whether it is ever to be analysed as syntactically part of a noun phrase, but when it occurs next to the NP it quantifies over, it follows it:

4.40 *árbaʕa i-zəʕtaf-án əlbaqi nnúba i-məllál-ən*
 four PL-black-PL remainder all PL-white-PL
 Four are black, the rest are all white. (2009-07-01/b)

4.41 *líyyam dá-wiyy-ok núba nətnán lhwá-nsən qawí*
 days MOD-DEM.PL-2:M all they wind-3PGen strong

These days all have strong wind. (2008-05-04/270)

- 4.42 *wən i-šhəqqa-ya nnúba, i-táš-as wən yə-qsím-a řábbi*
 REL.M 3M-need-PF all 3M-give.INT-3SDat REL 3M-apportion-PF God
 Anyone that is in need, he gives him what God has apportioned. (2008-03-03/250)

The corresponding form for two items is *jmiř* “both” < Cl. Ar. *jamīř*- “all”. The Arabic borrowing *kaməl* “whole, complete” is attested sporadically:

- 4.43 *ga-ř-ř-ak řářra əjnéh kaməl-ín-a*
 IRR-give-1S-2SDat ten pound all-PL-PF
 I will give you a whole ten pounds. (2002-03-19/Story of Two Boys)

kull “each, every”, a straightforward borrowing from Arabic, directly precedes the noun, eg:

- 4.44 *kúll taltí tə-řřəf taffwáht d ətxúřt s fús-ənnəs*
 every woman3F-grasp apple and knife with hand-3SGen
anni ga-t-qəřm-et
 COMP IRR-3F-cut-3FObj
 Each woman took an apple, and a knife in their hands to cut it. (2008-08-03/247)

- 4.45 *di-y-əčč əssmák kúll əjrmát*
 OPT-3M-eat fish[MASS] every Friday
 Let him eat fish every Friday. (2008-04-27/224)

This combines with the same article-less form of appropriate measure words as is used with numbers greater than 10 (see above):

- 4.46 *kúll-yom i-ħəřřú-yas náčču i támza*
 every-day 3M-put.INT-3SDat food to ogress

Every day he would put out food for the ogress. (2002-03-18/Ogress)

- 4.47 *kúll-sná* *i-táwas-as*
 every-year 3M-aid.INT-3SDat
 Every year he aids him. (2009-06-23/a)

kull-ħaja “everything” uses an Arabic noun not attested independently in Siwi:

- 4.48 *kúll-ħaja* *n* *wán* *ággwid* *lé-yə-xsa*
 every-thing GEN REL.M man NEG-3M-want
 Everything that a man does not like. (2002-03-18/Story of Two Boys)

kull “each” is by no means unique to Siwi within Berber; in fact, it has been borrowed into practically every Berber language. One might be tempted to reconstruct it for proto-Berber were it not for the handful of varieties that retain alternative universal quantifiers, notably reflexes of **Hak*. For El-Fogaha, Paradisi (1963:116) gives *kull íggen* “ognuno”, parallel to Siwi *kull-əjjən*, and *kull* “tutto”. For Awjila, Paradisi (1960) similarly gives *kull iwîn* “ognuno”; but there, *kull* fulfills not just the function and syntactic position of Siwi *kull* but also of Siwi *nnuba*, occurring adverbially and after NPs as in:

Wên-ma *slâ-n-t* *mídden n* *ašâl* ***kull***,
 where-COMP hear-3MP-3MSObj people GEN land all
 “Appena la gente di paese sentì l'accaduto,”
 As soon as all the people of the area heard it,

usâ-n-d *gallî-yen* *a-mmūd-ân* ***kull*** *déffer-a*
 come-3MP-hither want-3MP IRR-pray-3MP all behind-3MS
 “si recò alla moschea per pregare dietro di lui”
 they came all wanting to pray behind him. (Paradisi 1961:79)

The same is true of Nafusi, which has *kull úḡun* “ognuno”, *kull uséf* “ogni fiume” (every

stream), but also (with what is probably a reflex of the Arabic definite article) *ókkul* “tutto”, eg:

<i>Tikkélt</i>	<i>žemlén</i>	<i>lauhôš</i>	<i>n</i>	<i>eddúnyet</i>	<i>ókkul</i>
time	gather-3MP	animals	GEN	world	all

Once **all** the animals of the world gathered together... (Beguinet 1931:152)

So universal quantifiers among Siwi's closest relatives are syntactically quite homogeneous, and consistently appear to be Arabic borrowings. The prenominal position of “each, every” agrees with regional Arabic varieties (Gary & Gamal-Eldin 1982:112; Owens 1984:87), as well as with classical Arabic. However, it also agrees with that of inherited *hak* in Tamasheq (Heath 2006), one of the very few Berber languages to have retained the quantifier in this usage. Thus syntactic influence, while possible, need not be postulated here. In fact, the normal Arabic construction for “all” is prenominal *kull* + a definite (ibid.); the fact that *kull* has been borrowed into Awjila and Nafusi yet remains post-nominal indicates that lexical borrowing of universal quantifiers is not necessarily accompanied by syntactic borrowing.

4.1.1.7.3 Existential quantifiers

For the indefinite/definite contrast, see 2.4.1. For the negative existential quantifier *la*, see 7.6.1. NPs serving as quantificational variables in non-positive clauses are normally left unmarked, apart from appearing as indefinites, but some nouns and adverbs, eg *šra* “anything” (pan-Berber **kra*), *ħadd* “anyone” (Cl. Ar. *'ahad-*), *marra(wa)ħda* “ever” (Cl. Ar. *marr-at- wāħid-at-*), *qətt* “ever, at all” (Cl. Ar. *qətt-u*), *la ħħila* “nothing”, *af ula ħħila* “for no reason”, appear only in such positions:

4.49 *lá* *zr-i-x* ***šra***
 NEG see-PF-1S **anything**
 I didn't see **anything**. (2008-08-03/256)

4.50 *la t̥t̥ɪyyəb-ax h́ádd*
 NEG hit-1S **anyone**
 I didn't hit **anyone**. (2008-08-03/256)

4.51 *lá z̥r-i-x-t máɾɾawahda*
 NEG see-PF-1S-3MObj **ever**
 I've **never** seen it. (2008-08-03/256)

ayy(i) “any (at all)”, from Arabic *'ayy*, is optional and too rare for a full semantic analysis, but is attested, eg *ayyi šra qanuni* “**any** thing legal” (N1p192) or:

4.52 *ayy əjjən g-usəd šal n isiwən g-yə-dwəl*
any one IRR.3M-come land GEN Siwa IRR-3M-return
Anyone who comes to Siwa will come back. (N1p173)

4.53 *lá di 'áyy aṭil ssih*
 NEG EXIST **any** garden there
 There is **no** garden there. (N1p184)

Like its Arabic source, it precedes the NP; unlike it, it is exclusively quantificational and has no interrogative use.

4.1.2 Nominal morphology: mass vs. count nouns

Many nouns are inherently count nouns, pluralisable (unless proper nouns) and not divisible into instances of themselves; in generic usages where number is irrelevant, these appear in the count plural. Thus, to take two examples that in Arabic would use the number-neutral masculine singular:

4.54 *i-zánza awaw-án*
 3S-sell bean-Pl
 He sells beans. (2009-06-24)

- 4.55 *ág šal dawérwən tə-mdíw-en i-šümmá-n-tən*
 in land that.M.2=P F-ant-Pl 3-cook.INT-3Pl-3PlObj
 In that country, they cook ants. (2009-06-24)

Likewise, other nouns are inherently mass nouns, whose grammatical number is invariant and which cannot be combined with “one”; for example, *aman* “water” (inherently plural) or *ušək* “date sp.” (inherently singular.)

However, many nouns can shift from count to mass without the use of a measure. There are at least three morphologically distinct ways in which this may be done.

4.1.2.1 Count nouns formed by the feminine

The use of the feminine to form count nouns from mass nouns is less prevalent than in many Berber varieties, and much less so than in Arabic; it is mainly restricted to the numerous Arabic loanwords. Mass nouns with the Berber masculine marker receive the regular Berber feminine markers *ta-...-t* (sg.) and *ti-...-en* (pl.):

Table 48.

	masculine mass noun (“He sells...”)	feminine count singular (“one...”)	plural count plural (“three...”)	
pepper	<i>a-fəlfəl</i>	<i>ta-fəlfəl-t</i>	<i>ti-fəlfəl-en</i>	(< Cl. Ar. <i>filfil</i> -)
tiny fish (ones of fish”)	<i>a-ššir</i>	<i>ta-ššər-t</i>	<i>tə-ššer-en</i>	(< Cl. Ar. <i>šir</i> - “the young

Mass nouns with the Arabic article instead receive *t(i)-...-ət* (sg.) and *ti-...-a* (pl.), eg:

fish	<i>s-smək</i>	<i>ti-səmk-ət</i>	<i>ti-səmk-a</i>	(<Cl. Ar. <i>samak</i> -)
brick	<i>t-ṭub</i>	<i>t-ṭub-ət</i>	<i>ti-ṭub-a</i>	(<Cl. Ar. <i>ṭub</i> - < Coptic)
wood	<i>l-luḥ</i>	<i>t-luḥ-ət</i>	<i>ti-luḥ-a</i>	(<Cl. Ar. <i>lawḥ</i> -)
feather	<i>r-riš</i>	<i>t-riš-ət</i>	<i>ti-riš-a</i>	(<Cl. Ar. <i>rīš</i> -)
hair	<i>š-šar</i>	<i>t-šar-ət</i>	<i>ti-šar-a</i>	(<Cl. Ar. <i>šar</i> -)

An example with an unusual count plural is:

tomato *t-ṭmaṭim* *ṭamṭm-ət* *ṭamṭm-iyy-en* (<Eg. Ar. *ṭamāṭim*, sg. *ṭamaṭmāya*)

Note that, while previous works have indicated that the feminine also yields count forms for etymologically non-Arabic fruits (eg “pomegranate”, “olive”, according to Vycichl (2005:199)) – for which the feminine also forms tree names (see Noun heads chapter) – my principal consultant rejects this:

4.56 لو الشجرة صار *són n tərmunén*. لأنها شجرة الرمان اسمها
tarmunt. لو الرمان نفسه الفاكهة، القطعة، *són n ərmúnən*.

If it's the tree, it becomes *són n tərmunén* (two GEN F-pomegranate-FPI), because the pomegranate tree is called *tarmunt*. If it's the pomegranate itself, the fruit, the part, then *són n ərmúnən* (two GEN pomegranate-MPI). (2009-06-18)

and likewise:

4.57 *úš-i* *ərbʕa n* *i-zammúr-ən*
 give-1SgDat four GEN MPI-olive-MPI
 Give me four olives. (2009-06-23)

Thus all the underived nouns noted to exemplify this phenomenon seem to be Arabic loans, and in every case they use final *-ət* (as with other Arabic loans) rather than *-i* (as in Berber) strengthening Kossmann (2008)'s suggestion that this feature of some Berber grammars derives from Arabic. On the other hand, the same affixes are attached to the consonantal root of a verb, irrespective of etymology, to form countable nouns of action:

Table 49.

	Gerund	Single action	Multiple actions
jump	<i>a-nəṭṭi</i>	<i>ti-nəṭṭ-ət</i>	<i>ti-nəṭṭ-a</i>
cut	<i>a-qṭam</i>	<i>ti-qṭm-ət</i>	<i>ti-qṭm-a</i> (Ar. <i>qṭm</i>)
cough	<i>a-kǔḥkǔḥ</i>	<i>ti-kǔḥkǔḥ-ət</i>	<i>ti-kǔḥkǔḥ-a</i> (Ar. <i>kǔḥkǔḥ</i>)
descend	<i>a-ggaz</i>	<i>ti-ggz-ət</i>	<i>ti-ggz-a</i>
drip	<i>a-səṭṭəb</i>	<i>ti-səṭṭ-ət</i>	<i>ti-səṭṭ-a</i>

In this part of the grammar the use of the feminine to form count nouns is systematic rather than sporadic. However, similar constructions are not well documented for other Berber varieties, making it difficult to determine whether this represents a calque on Arabic or an ancient common retention.

4.1.2.2 Count noun – generic mass noun syncretism

Another set of nouns has count singulars identical to their generic mass nouns, and distinct count plurals (compare English: *he sells ice cream, give me three ice creams*). The singulars may be of either gender. All examples so far found are Arabic loans:

Table 50.

	mass=count	sg	count	pl	
potato	<i>baṭaṭəs</i>	(m.)	<i>baṭaṭəs-iyy-ən</i>		(<Eg. Ar. <i>baṭāṭis</i> , sg. <i>baṭaṭsāya</i>)
squash	<i>ləkḍewa</i>	(f.)	<i>ləkḍew-iyy-at</i>	(2009-06-25)	(cp. Alg. Ar. <i>kabuya</i> , Hausa <i>kabewa</i>)
okra	<i>əlbəmya</i>	(f.)	<i>əlbəmy-at</i>	(2009-06-25)	(<Eg. Ar. <i>ḥāmiya</i>)

Eg:

4.57	<i>aggwid</i>	<i>wən</i>	<i>yə-zzənza</i>	<i>baṭaṭəs</i>
	man	REL.M	3M-sell	potato

The man who sells potatoes (2006-06-24)

4.58	<i>háyya</i>	<i>ga-n-qáyəṭ</i>	<i>ṣašra</i>	<i>n</i>	<i>baṭaṭəs-iyyən</i>	<i>s</i>	<i>aziwá</i>	<i>n</i>	<i>téni</i>
	HORT	IRR-1P-barter	ten	GEN	potato-MPI	with	cluster	GEN	date

Let's barter 10 potatoes for a cluster of dates (2009-06-18, elicited)

4.1.2.3 Suppletive count forms

At least one noun has a suppletive count form: “dates” is *teni*, but “date (countable)” is *azəggar*, pl. *izəggarən*. This suppletive pair is shared with El-Fogaha: collective *tēnī*, indiv. *tzeggârt*, pl. *izeggâren* (Paradisi 1963:106). *teni* derives from proto-Berber *taHăyni* (Kossmann 1999), and *azəggar* has cognates elsewhere in Berber referring to other fruits, eg Tumzabt *tazəgg^wart* “épineux, jujubier, roncier” (Delheure 1984); so contact does not appear to be a direct cause of this development.

4.1.3 Syntax

4.1.3.1 Quantifying count nouns

For “one”, three options are possible. Most commonly, it precedes the noun and is linked through a genitive particle *n*:

4.59 *ájjət n taftàlt*
 one.F GEN bottle
 one bottle (N3p19)

4.60 *yáʕni múmkin wáya ga-i-xáddəm ɣer jjət n tasəmmaʕət*
 so maybe this IRR-3M-make work just one.F GEN speaker
 So maybe this one will turn on just one speaker. (2008-05-03/240)

The *n*, obligatory with other numbers, is omitted when “one” is being used simply to indicate the specific indefinite. *əjjən* may be used as an indefinite variable (eg *həttə əjjən* “no one”), so this could be regarded as apposition rather than quantification, in which case the omission of *n* is expected. Since it can be difficult to hear reliably in quick speech whether or not an *n* is present between two *t*'s (let alone between another *n* and a consonant), the difference was inquired into specifically; my main consultant confirmed the distinction, giving the following example:

4.61 *يقال على سبيل المثال: من وضع هذا الكتاب هنا؟ يقال: ájjət tləččá*

One says for example: Who put this book here? One replies: *ájjət tləččá* [one.F girl]. (2009-06-27)

Moreover, “one” may also follow the noun for contrastive focus, an option not attested for other numerals:

- 4.62 *akúbb^{wi} ájjən... i-ráh i ássuq, y-uḡá tyazát*
 boy one.M 3M-go to market 3M-buy chicken

One boy... went to the market and bought a chicken (whereas the other wasted the money that he had been given) (Story of Two Boys)

- 4.63 *ntátət tyazát ájjət, wídin sábsa n tibəṭwén, y-aṣmár-n əmnét, θamániya*
 she hen one.F, those seven GEN eggs, 3-make-PL how many, eight

It was (just) one hen, those were seven eggs; they made how many? Eight.

(Story of Two Boys)

Otherwise, all numbers precede their noun phrases and (despite being largely borrowed from Arabic) are connected to them, as elsewhere in Berber, with the genitive particle *n*. This particle is often inaudible after “two”, where it immediately follows another *n*, but must be postulated not only for paradigm uniformity but based on Siwis' own intuition as manifested in their written transcriptions (as in the emailed example below):

- 4.64 *ḡúr-əs sən n tərɰáwen.*
 at-3S two GEN children

He had two children. (Yusuf/246)

- 4.65 <Sen enterwaween s3ayda ye3en3nena esseeh.>
sən n tərɰawen ššayda i-šənšən-in-a ssih
 two GEN children Saidi.PL 3-sit-P-PF there

Two Saidi (Upper Egyptian) children are sitting there. (2009-01-10/email)

- 4.66 *wáya i-xáddəm sən (n) tisəmmašiyen.*
 this 3M-work.INT two (GEN) speakers

This one turns on two speakers. (2008-05-03/240)

- 4.67 *díy taltí ḡúr-əs tlata n tərɰawén*
 EXIST woman at-3S three GEN children

There was a woman who had three children. (Story of the Prince's Sword, Anwar

Ali Ghanem, http://www.tawalt.com/sound_library_display.cfm?lg=_TZ&id=22&mStartRow=1)

4.68 *sábfá n tibətwén... tmánya n tibətwén*
 seven GEN eggs... eight GEN eggs
 seven eggs ... eight eggs (Story of Two Boys)

4.69 ...*anni dí alqés n əṭnás n íran g*
ássma...
 ...COMPL EXIST quantity GEN twelve GEN stars in
 sky.DEF...
 ...that there were a total of twelve stars in the sky... (Yusuf/246)

4.70 *miyya n taftal*
 hundred GEN bottles
 100 bottles (N3p19)

The same syntax is used with interrogatives:

4.71 *áṭil dáwa ɣúr-əs əmnit n tisutáy?*
 garden MOD-DEM.M at-3S how many GEN palms?
 How many palm trees does that garden have? (2009-06-18)

Fractions likewise take the genitive, but are followed by the singular:

4.72 <ازجن نجبن>
azgən n agbən
 half GEN house
 half a house (elicited, 2009-06-16)

4.73 *azgən n tábtut*
 half GEN egg

half an egg (2009-06-17)

Note that in all cases above 1 the noun phrase appears in the plural. In Arabic, by contrast, 2-10 take the plural, but higher numbers take noun phrases in the singular. Thus, while Arabic's juxtaposition of numbers to their noun phrases could in principle be interpreted as a genitive and thus equated to the observed Siwi construction with *n*, their disagreement on noun phrase number rules out any attempt to regard Siwi as having copied Arabic syntax for the Arabic numbers it has borrowed.

According to Galand (2002:212), Berber languages fall into four groups with regard to numeral syntax:

- IA. Tachelhit and Tuareg use direct juxtaposition with the plural for 10 and below, and *n* with a singular for 11 and above.
- IB. Kabyle and Tumzabt use direct juxtaposition below 10, and a plural for 11 and above.
- IIA. Central Morocco and Ouargla use *n* for all numbers above a small figure (1/2/3), and the singular for 11 and above.
- IIB. Most Zenati varieties (Rif, Chaoui, Libya) use *n* for all numbers above a small figure (1/2/3), and the plural for 11 and above.

In his terms, as seen above, Siwi belongs in group IIB (notwithstanding his footnote on p. 215, based on data disagreeing with mine.) The fact that, in this respect, it behaves identically to most members of a subgroup of Berber that on independent grounds (notably the treatment of prefix vowels) it appears to be particularly closely related to – Zenati – is another indication that this behaviour is probably inherited. This applies for 2 and above in Nafusi (Beguinet 1931:122), for all numbers in Figuig (Kossmann 1999:209), Chaoui (Penchoen 1973:29), and Chenoua (Laoust 1912:58), and for 1-10 in Djebel Bissa (Genevois 1973:67).

On the other hand, Galand (*ibid*:215) suggests that IA represents the original situation across Berber, and that “l'adoption des noms de nombres arabes a sans doute contribué... à affaiblir l'ancien système syntaxique. Mais on a vu (3.2) que loin de provoquer l'emprunt de la construction arabe elle a plutôt favorisé l'extension de la tournure prépositionnelle”. (“The adoption of the Arabic number names has no doubt

contributed... to weakening the old syntactic system. But we have seen that, far from provoking the borrowing of the Arabic construction, it has rather favoured the extension of the prepositional turn of phrase.”) It is noteworthy, as he observes, that all the languages displaying types IIA/B have borrowed their numbers above 3 (or lower) from Arabic. However, he has little to say on why this should be the case, beyond the rather vague statement (*ibid.*) that “If the shock of Arabic rattles Berber syntax, it seals the cracks using its own resources and does not show itself to be less conservative than the morphology.” (“Si le choc de l'arabe ébranle la système berbère, celle-ci colmate les fissures au moyen de ses propres ressources et ne se montre pas moins conservatrice que la morphologie.”)

One might attempt to elaborate on Galand's observation by proposing a link like the following between this simplification and Arabic influence: In the presumed original system, *n* was used as a linker for high numbers but not for low ones. In Arabic, none of the numbers take a linker. Based on the case of numbers above 10 (and of genitives), bilingual speakers might have set up an equivalence between Arabic Num _ and Berber Num *n* _, and then extended the latter to lower numbers by analogy with the former. However, no such equivalence with Arabic exists in general for 1 and 2; this account would have to account for them by a second analogical extension, making it less attractive.

In this case, it seems preferable to look at system-internal motivations. It is clear that the current situation of Siwi, and the IIB languages more generally, represents a simplification of the original situation, in that the number of the noun phrase is predictable from that of its referent alone, and in that the only variable relevant to predicting the syntax is whether or not the numeral is greater than 1. This is illustrated by the following table (ignoring gender agreement and complications resulting from definiteness for simplicity's sake): whereas Arabic and Tachelhit both need three or more distinct cells, Siwi only needs two, and the distinction between them is independently motivated by the singular-plural distinction.

Table 51.

	1	2	3 to 10	11 +
Tachelhit (Berber IA)	Num _[sg]	Num _[pl]		Num <i>n</i> _[sg]
Classical Arabic	_[sg] Num	_[dual] (Num)	Num _[pl]	Num _[sg]
Egyptian Arabic (Woidich 2004:56, 71, 102)	_[sg] Num {inan.} Num _[sg] {people}	_[dual] (Num) {inan.} Num _[sg] {people}	Num _[pl]	Num _[sg]
Bahariya Arabic (Drop 2007:91ff)	_[sg] Num {inan.} Num _[sg] {people}	_[dual] (Num) {inan.}	Num _[pl]	Num _[sg]
Cyrenaican Arabic (Owens 1984:78)	_[sg] Num	_[dual] (_[pl] Num)	Num _[pl]	Num _[sg]
Siwi (Berber IIB)	Num <i>n</i> _[sg] (_[sg] Num)	Num <i>n</i> _[pl]		

Such a simplification might have been motivated by imperfect acquisition of Siwi as a second language – a likely common situation in earlier stages of Siwi history (Souag 2009) – but even this is rendered less probable by its wide distribution in Zenati.

A more likely candidate for Arabic influence is the alternative Noun Numeral order for “one”. As seen above, this is found in Classical Arabic and continues in the dialects currently influencing Siwa, and it is not documented in the Berber languages compared above. It is not clear how much weight can be placed upon the lack of attestation, however; if this order is available as an alternative in other eastern Berber languages, but is as unusual in them as in Siwi, it is unlikely that it would have been described for them in the existing literature.

Measure words (all Arabic borrowings) display a different behaviour, discussed above.

4.1.3.2 Quantifying mass nouns

The invariable construction is measure *n* mass, using the usual genitive particle, as:

4.74 *talāta kīlu n úšakku*
 three kilo GEN date sp.
 three kilos of *ušak*-dates (2009-06-19/a)

4.75 *uyí-x attmán n əjybán*
 buy.PF-1S eighth GEN cheese
 I bought an eighth (unit) of cheese. (2009-06-19/a)

This construction is widespread elsewhere in Berber. It differs from Arabic only in the presence of the *n*; but the fact that the *n* has been retained means there is no motivation to postulate influence here, even though almost all measures are Arabic loan phrases.

4.2 Kwarandzyey

4.2.1 Forms

Kwarandzyey has retained Songhay words for “one”, “two”, and “three”:

Table 52.

Kwarandzyey	<i>a-ffu</i>	<i>inka</i>	<i>inza</i>
Koyra Chiini	<i>a-fo</i>	<i>hinka</i>	<i>hinza</i>
Tasawaq	<i>à-fó</i>	<i>hínká</i>	<i>hínzà</i>

“One” has two separate forms: *a-ffu* when syntactically independent (eg acting as a noun phrase), clitic=*fu* (usually reduced to =*fⁿ* except intonation phrase-finally) as a quantifier. *inka* and *inza* alternate, apparently freely, with *əynka/ayinka* and *əynza/ayinza* (also without the emphatic: *inza* etc.)

As in the nearest Berber languages, Taznatit (Boudot-Lamotte 1964) and Middle Atlas Tamazight (field notes for Ayt Khebbach dialect), all numbers above three are Maghrebi Arabic (including “million” and “billion”, ultimately from French.) This has been the case for at least 100 years, as attested by Cancel (1908). The forms are:

<i>Table 53.</i>		Multiplicative combining form (see below)
one	<i>wahəd</i> (N1p195)*	(* starred forms used only in
two	<i>tnin</i> *	additive compounds like “21”)
three	<i>tlatsa</i> *	<i>tsəlts</i>
four	<i>ṛəbʕa</i>	<i>ṛəbʕ</i>
five	<i>xəmsa</i>	<i>xəms</i>
six	<i>səttə</i>	<i>sətt</i>
seven	<i>səbʕa</i>	<i>səbʕ</i>
eight	<i>tsmənyə</i>	<i>tsəmn</i>
nine	<i>təsʕa</i>	<i>təsʕ</i>
ten	<i>ʕəšʕa</i>	<i>ʕəšʕ</i>
eleven	<i>hdaʕš</i>	<i>(hdaʕšən)</i>
twelve	<i>tnaʕš</i>	<i>(tnaʕšən)</i>
thirteen	<i>tləttəʕš</i>	<i>(tləttəʕšən)</i>
fourteen	<i>ṛəbʕəttəʕš</i>	<i>(ṛəbʕəttəʕšən)</i>
fifteen	<i>xəmsʕaʕš</i>	<i>(xəmsʕaʕšən)</i>
sixteen	<i>sttəʕš</i>	<i>(sttəʕšən)</i>
seventeen	<i>sbəʕtəʕš</i>	<i>(sbəʕtəʕšən)</i>
eighteen	<i>tsməntəʕš</i>	<i>(tsməntəʕšən)</i>
nineteen	<i>tsəʕtəʕš</i>	<i>(tsəʕtəʕšən)</i>
twenty	<i>ʕəšʕin</i>	
thirty	<i>tlatin</i>	
forty	<i>ṛəbʕin</i>	
fifty	<i>xəmsin</i>	
sixty	<i>səttin</i>	
seventy	<i>səbʕin</i>	
eighty	<i>tsmanin</i>	
ninety	<i>təsʕin</i>	
one hundred	<i>miyya</i>	
two hundred	<i>miytsin</i>	
one thousand	<i>aləf</i>	
two thousand	<i>alfəyn</i>	
thousands	<i>alaf</i>	
million	<i>məlyun</i>	
millions	<i>mlayən</i> (N5p63)	
billion	<i>məlyar</i>	

Compound numbers too are formed as in Maghrebi Arabic. $10a + b$ ($a, b < 10$) is $b u$ $10a$, eg 21 = *wahəd u ʕəšʕin* (N1p195). Multiples of 100, 1000, a million, or a billion

(other than the duals indicated) are formed by putting the multiplicative combining form of the relevant number before the unit, eg *ṛəbʕa mya* (400) or *xəmsa u ʕəšrin aləf* (45,000.) Other combinations are formed with *u* “and” in descending order of magnitude, eg 420 = *ṛəbʕa mya u ʕəšrin*, 2001 = *alfəyn u waḥəd*. However, this borrowing has had less effect than might be expected on the grammar of the number system, as seen below.

Ordinals are all (local) Arabic loanwords: *luwwəl/luwwər* “first”, *zzawəj* “second”, *ttsaləts* “third”... *ttsali* “last”. Two of these forms are used in local Arabic, but not as ordinals in Classical: *zzawəj* is formed by imposing the ordinal template *CaCəC* on Maghrebi Arabic *zuj* “two” < Cl. Ar. *zawj*- “pair”, and *ttsali* derives from Cl. Ar. *tālī* “following”. As discussed in the Adjectives chapter, these are best considered nouns. This is at least a century old: Cancel (1908:329) gives Arabic forms for third, fourth, fifth, and last (<thaleth>, <arbâ>, <khames>... <ettali>), and optionally for “first” (<louer> = *luwwər*). He gives non-Arabic alternatives for “first” (<affo> = *affu* “one” or <eguimer> = *a-ggimər* “it precedes”), “second” (<affiaten> *a-fyatən* / <affiat> *a-fyat*, literally “other”, or <bahinga> *ba hənga*, literally “follows”), and “last” (<q(o)aq(o)ouani> = **kʷakʷa-wani* “end-G2”). His “first” and “second” are probably to be taken as speakers' paraphrases rather than as translations of the ordinals; however, his “last” is reminiscent of Tasawaq, where ordinals are formed from numbers by adding *wánè* (Kossmann 2003), and might thus represent a now-disused relic of an earlier system. In southern Songhay, ordinals are formed by suffixing *-nte*; cp. Soninke *-nde/-ndi* (Diagana 1995:161).

4.2.1.1 Cryptic numerals

The loss of all but three members of the original Songhay number system means that Arab listeners can easily understand numbers quoted in a Kwarandzyey conversation even if they remain ignorant of the meaning of the rest of what is being said. In commercial negotiations this is sometimes inconvenient. Thus, as in Siwa, a system of alternatives using exclusively non-Arabic vocabulary has been built up, complementing a more general system of cryptic expressions intended to conceal the content of an

utterance from Arabic speakers or even Kwarandzyey speakers not “in the know.” This is primarily achieved by building up numbers larger than 3 through the use of *kambi* “hand”, just as Siwi and other Saharan Berber languages use *fus* “hand”. Again, all Southern Songhay languages have an inherited base-10 system with no obvious loanwords; this is a functionally restricted innovation motivated by the relatively recent Arabic borrowings, not a retention of some older base-5 system. Numbers between multiples of 5 are built up semi-systematically with reference to multiples of 5 by subtracting (*kaw* “take away”, *zab* “reduce”) or adding (*tattan*) units or fingers (*agaddad*). In this respect the Kwarandzyey system is especially similar to that of el-Fogaha, where, for example, the cryptic numeral for “nine” is *ifassen gér iggén adâd* “two hands less one finger” (Paradisi 1963:116).

Table 54.

four	<i>nən kamb=fu kaw=a-ka affu</i> (your one hand remove from it one) (N4p18) <i>nən kamb=fu agaddad=fu a-zzab</i> (your one hand, one finger less) (N5p57)
five	<i>nən kamb=fu</i> (your one hand) (N4p18 = N5p57 = 2008-02-05/10)
six	<i>nən kamb=fu tattan=a-s affu</i> (your one hand add to it one) (N4p18) <i>nən kamb=fu agaddad=fu a-ttattan</i> (your one hand, one finger added) (N5p57)
seven	<i>nən kamb=fu ndza inka</i> (your one hand and two) (N4p18)
eight	<i>nən kamb=fu ndza inza</i> (your one hand and three) (N4p18)
nine	<i>nən kambi in inka kaw=a-ka affu</i> (both your hands remove from it one) (N4p18)
ten	<i>nən kambi in inka</i> (both your hands) (N4p18 = 2008-02-05/10)
thirteen	<i>nən kambi in inka tattan=a-s inza</i> (both your hands add to it three) (N4p18)

- fifteen *nən kəmb=yu ndza nən tsi=fu*
 (your hands and your one foot) (N5p57)
nən kəmb ayinza
 (your three hands) (2008-02-05/10)
- twenty *nən kəmb=yu ndza nən tsi=yu*
 (your hands and your feet) (N5p57)
nən kəmb ini rəbʕa
 (your hands they four) (2008-02-05/10)

Cryptic numbers higher than twenty are not attested, apart from a calque from local Arabic slang, *aḍḍab* “million” (lit. “brick”).

A separate register is the following set of numerals 1-10, traditionally used in children's games and attested only in counting rather than within NPs:

wahi, tsani, tsəlləts, ɖərɓu, mayɔ, yərɣi, həyɖəs, məyɖəs, gʷərgʷər (or *gʷərgʷəy*),
ʕəʃra (N5p69)

The etymology of these is somewhat obscure; while 1, 2, 3, and 10 are transparently Arabic, the others cannot plausibly be derived from Arabic, Berber, or Songhay numerals. *ɖərɓu* in Arabic would mean “hit him”, and *mayɔ* is Kwarandzyey for “why?” or “gather”. A remarkably clear-cut parallel is attested in an isolated numeral set from the Chaoui of Batna, quite distinct from the normal Chaoui numbers (notable similarities in bold):

*hadéllu, **tēnīnu**, **téltu**, **dɣbu**, sýəkà, nýəkà, **haič**, **uič**, **korkor**, rúyèla* (Grimme 1926)

An even closer reflex of the same set is attested for 1-9 in the Berber of Bousseghoun (Algoun 2010), although *ɖərɓu* is dropped, turning 5-9 into 4-8, and *mayɔ* has changed places with *yərɣi*:

وحو، تنو، تلتو، ءالغبي، ماغ، هيتش، ميتش، نونو، قورقو
 <**w**hu, **t**nu, **t**ltu, **a**lyi, **m**ay, **h**itš, **m**itš, nunu, **g**urgur>

These forms must therefore originate in North rather than West Africa.

4.2.1.2 Fractions

ufri/ifri ‘half’ is a borrowing from Zenaga *uftʰih* ‘moitié, demi’ (Taine-Cheikh 2008a); the later shift of *fl* > *ftʰ* in Zenaga is regular (*ibid*:LXXIII). Other fractions are Arabic, as was already the case in CANCEL (1908:330): eg *tsuləts* (N5p67) or *ttsuluts* (N9p24) ‘one-third’ < Cl. Ar. *θulθ-*, *ṛbəʕ* ‘one-quarter’ < Cl. Ar. *ṛubʕ-*, *ssudus* ‘one-sixth’, *ssubuʕ* ‘one-seventh’, *ttsumun* ‘one-eighth’, *ttsasuʕ* ‘one-ninth’ (N9p24). Speakers are well aware of their etymology, and tend not to consider them ‘real’ Kwarandzyey; in elicitation, they sometimes offer paraphrases using the verb *zbən/zmən* ‘divide’ with *ka* after the number, eg *yaʕam-zbin-a ṛəbʕa=ka* ‘we will divide it four ways’ (N5p67).

4.2.1.3 Interrogative

mahəyni ‘how many?’ is a compound formed from two inherited Songhay lexemes: *ma* ‘what?’ (no longer productive except in rhetorical questions), cp. KC *maa*, KS (*ma-*)*č̣in*, and *həyni* ‘quantity’, cp. KC/KS *hinne*. In embedded questions, it is replaced by *həndzi* < *həyni* + *dzi* ‘anaphoric demonstrative/relative marker’.

4.2.1.4 Measure words

4.2.1.4.1 Measures behaving like Arabic normal count nouns

In Maghrebi Arabic, some measure words take the multiplicative numbers for 3-10, and the dual for 2 (eg *šhər* ‘month’), with the noun's number as usual (singular for 3-10, plural above). Many of these measures have been borrowed into Kwarandzyey, retaining their full original grammar as in Siwi. Unlike Siwi, however, Kwarandzyey has in several cases retained an indigenous word with the same referent used when not counting. Thus ‘day’ is *zəydi* in Kwarandzyey, but days are normally counted with Arabic expressions using the multiplicative numbers and singular (*yum*), dual (*yuməyn*),

or plural (*iyyam*) forms of the Arabic word for “day” as appropriate. This has been the case since at least Cancel (1908:332), who gives <ioumin> “deux jours”, <thlethiam> “trois jours”, <arbâ iam> (p. 347) “quatre jours” (but <zer'd fou> “un jour”).

4.76 *ʕa-gg^wa=a.ka* *xəms-iyyam*
 1S-stay=3S.LOC five days
 I stayed in it for five days (N4p23)

4.77 *ya-b-dzam.ana* *ʕəʃr-iyyam=γ=yu*
 1P-IMPF-do.3S ten days=DEM=PL
 We do it for these ten days (2008-01-19/4)

4.78 *xūd* *nə-ffaz-a,* *nə-m-dər* *yuməyn wəlla tlata* *nə-b-faz-a*
 when 2S-dig-3S 2S-IRR-go two days or three 2S-IMPF-dig.3S
 When you dig it, you go two or three days and dig it. (2008-01-01/8)

Note that, in the latter example, “days” undergoes ellipsis in its second occurrence, suggesting that these forms consist of two words syntactically as well as morphologically.

Similarly, a lunar month can be somewhat archaically expressed in Kwarandzyey as *həndzu* “crescent”, but months are in practice invariably counted in Arabic (sg. *ʃhər*, du. *ʃəhrəyn*, pl. *ʃhur*). This too is attested in Cancel (1908:332): <cheharin> “deux mois”, <thletha, arbâ chehour, etc. comme en arabe> “trois, quatre... mois”.

4.79 *a-ba* *uy* *a-b-yəħzən* *a-m-dər* *sətt-əʃhur*
 3S-EXIST REL 3S-IMPF-sad 3S-IRR-go six months

There are some who stay sad, who go as far as six months (staying sad)... (2008-01-19.Mohamed_Ayachi.7)

4.80 *a-dri* *təlt-əʃhūr*
 3S-go three months

He went for three months (2008-01-10/10)

Years are likewise expressed and counted in Arabic – the former by default, as all years likely to be used normally are higher than three. This too is attested in Cancell (1908:333): <arbâ senin> “4 années”, <khams id.> “5 années”. The Songhay word for year, *giri*, is now restricted for many speakers to the contexts *kũ-ggiri* “every year” and *gər-γu* “this year”, although elsewhere in Songhay its cognate is used in counting too, eg KS *jiiri hinza* “three years” (Heath 1998b:70). Maghrebi Arabic has two words for year, *ʕam* and *sna*; only the former appears in the dual (*ʕam-əyn*), and in the plural the latter is normal (*snin*). In the singular both alternate, but *ʕam* is commoner in a non-counting context, and *sna* with a number above 10. This seems to be replicated in Kwarandzyey:

4.81 *ʕa-bbs-a ndza ʕam kũll*
 1S-pass-3S with year all
 I surpass him by a whole year. (2008-02-05)

4.82 *mazal rəbʕa snin fu...*
 still four years one...
 Still some four years yet... (2008-02-05)

4.83 *a ʕabts ʕam-əyn*
 oh 1S-IMPF-say year-DUAL
 Oh, I'd say two years. (2008-02-05)

“Hour” can only be expressed through the Arabic loan *(s)saʕət*, and is normally counted in Arabic:

4.84 *əlʕayyub a-b-ikun an gama indz-a ħsab saʕt-əyn hakkak*
 Aldebaran 3S-IMPF-be 3SGen between with-3S about hour-DUAL thereabouts
 Aldebaran (a star) will be between it and it in about two hours or thereabouts.
 (2007-12-21/33)

However, this seems not to have applied in 1908; Cancel 1908:347 gives <sâat arbâ> “four hours”, with the Songhay order.

At least one common temporal measure is still counted like a normal noun: *tsara* “time”. While resembling the Classical Arabic word *tāra-t-* “time”, this word is unknown in colloquial Arabic, and would be expected to have been borrowed with an emphatic *r*. It seems preferable to derive it from Middle Atlas Tamazight *tawala* “time” (Taïfi 1991), with the regular change of non-initial *l* > *r*, and loss of a semivowel between two *a*'s, comparable to the alternation of *ha* / *haya* “any(thing)” and the regular loss of the initial *y* after a final *a* in *yayu* “us” when cliticised to the verb as a direct object.

Some traditional measures also fit into this category. Thus *qama* “span”:

- 4.85 *mahəyn nə-m-bəγ nə-m-dza=a.ka, təlt qamat wəlla rəbʕa wəlla*
 how much 2S-IRR-want 2S-IRR-do=3S.Loc three spans or four or
 You do as much as you want out of it, three spans or four or whatever. (2007-12-30/19)

4.2.1.4.2 Measures behaving like Arabic special count nouns

Another class of measures, corresponding to the special count nouns of Egyptian Arabic discussed above, take the normal Maghrebi numbers preceding the noun with the noun remaining singular. A common example is *kilu* “kilo”:

- 4.86 *tslatsa kilu n həmu*
 three kilo GEN meat
 three kilos of meat

- 4.87 *daymən ʕ-ba-zu-ts rəbʕa kilu xəmsa kilu*
 always 1S-PF-take-hither four kilo five kilo
 I'd always have brought four, five kilos. (2007-12-06/AM)

Likewise *minut* “minute”, from French:

- 4.88 *xəmsa minut* *bq-g^wa=a.s(i)*
 five minutes PF-remain=3S.Dat
 Five minutes remain until it (2008-01-19/7)

4.2.1.5 Absolute time specification

Clock times, a comparatively recently introduced concept, are expressed exactly as in Arabic, with Arabic numbers plus the Arabic definite article on the hour. The Arabic feminine ending *-a* is added to “one”, forming *lwaħda* “one o'clock”.

- 4.89 *əlħdiʕəš* *lʕašra* *a-m-ka*
 eleven o'clock ten o'clock 3S-IRR-come
 He'd come back at 11 or 10. (2007-12-06/AM)

- 4.90 *a-s-sab-wəddən* *mʕad* *ttsmənya* *tsəksi*
 3S-NEG-PROG-call.prayer until eight o'clock now
 The call for prayer doesn't occur until eight o'clock now. (2008-01-19/7)

Days of the week are expressed entirely with unmodified Arabic loanwords, five out of seven of which derive etymologically from Arabic numbers, eg *əlħədd* Sunday, *ləxmis* Thursday.

Likewise, dated years are expressed in Arabic (unsurprisingly, since in practice these are always greater than three), or occasionally (as is often done in Algerian Arabic) in French:

- 4.91 *ini* *ini* *i-ba-ddza-γəy* *səbʕa u* *tslatsin*
 they they 3P-PF-do-1S 37
 They put me down as [19]37 [speaker's birth year] (2007-12-11/8)

- 4.92 *mahəyn gga n-ba-yzid?* - *katər-van-trwa*
 how many PAST 2S-PF-bear? - quatre-vingt-trois
 What year were you born? - '83. (2008-02-05)

Decades are expressed with the Arabic plurals of the tens, pieces of morphology otherwise not used in Arabic numbers borrowed into Kwarandzyey:

- 4.93 *səbfinat, səttinat, ndza nn ləqran*
 seventies sixties with 2S.GEN peers
 The 1970s, the 1960s, with your peers... (2007-12-06/AM)

In Southern Songhay, similarly, times and years are typically given in French (eg Heath (1998a:107, 145, 153)), reflecting the novelty of these systems of marking time and their transmission through state-related structures.

4.2.1.6 Currency

Amounts of money are measured in centimes, without a unit being provided; centimes are not in circulation, so sums of money are always multiples of 100. They are usually expressed in Arabic, which requires no numerals or structures other than those already borrowed. However, they are sometimes expressed in French:

- 4.94 *set mil a-yyərxəs?*
 seven thousand 3S-cheap
 Seven thousand (70 DA) is cheap? (N7p115)

This cannot be characterised as codeswitching into French, since most speakers do not know French, and French-Kwarandzyey switching with items other than numerals was scarcely attested. However, the use of French numerals for sums of money is common in Algerian Arabic, even among speakers with minimal knowledge of French; such cases may well constitute codeswitches into Algerian Arabic. Their rarity in

Kwarandzyey argues against a borrowing analysis.

4.2.1.7 Non-numerical quantifiers

As above, it is convenient to divide these into ones indicating amount vs. ones defined relative to the whole set. The former set is syntactically and etymologically rather heterogeneous, although the core elements are inherited, and includes one numeral; the latter is etymologically homogeneous, all derived from Arabic, but displays multiple distinct syntactic constructions, only one of which can usefully be compared to one of the ones used for numerals.

4.2.1.7.1 Fuzzy amount quantifiers

həybbu / həybbəw /hibbu “many, much, a lot, very” (historically but not synchronically derived from *haya* “any” < “thing” and the verb *bu* “be numerous”, both inherited).

This often appears adverbially:

- 4.95 *a-b-yəxdəm* *həybbəw*
 3S-IMPF-work much
 He works a lot. (2008-01-19/08)

However, it can also appear within a noun phrase in either of two constructions, *_ n N* (probably to be identified with the measure+noun construction) or, more commonly, NP *_*; in either case, the plural marker *yu* is absent.

- 4.96 *tsirzuz=fu,* *wəlla* ***tsirzuz həybbu***
 hare=one, or **hare many**
 one hare, or many hares (2008-01-19/08)

- 4.97 *əgga* ***həybbu n*** *bə* *s-bə* *walu*
 PAST **many GEN** **person**NEG-EXIST no
 There used to be not many people at all (2007-12-30/17)

The NP takes singular agreement:

- 4.98 *bɑ həybbukka / *i-kka*
 person many come / *3P-come
 Many people came. (N8p109)

An exclamatory near-synonym used only attributively is the Arabic borrowing *šħalmən* “so many” (M. Ar. (*a*)*šħal* “how many” + *mən* “from”):

- 4.99 *šħalmən qaləb nə-m-nən-ndza*
 so many square 2S-IRR-drink-CAUS
 So many squares you would irrigate! (2007-12-30/19)

həybbu can be used predicatively, eg:

- 4.100 *uyudzi a-m-gɑ ləmb^w=ka, həybbu ini*
 DEM.ANA 3S-IRR-find garden=LOC, many 3P
 Those are found in the garden, they are many (types). (2007-11-22/11)

But a commoner tactic for predication is to select a semantically similar verb, notably inherited *bu* “be numerous”, *ħarħəm* “be plentiful, be all over the place” (< M. Ar.), and occasionally inherited *ħən* “be full” eg:

- 4.101 *i-bbu zəd*
 3P-numerous too
 They're numerous too. (2008-01-01/05)

- 4.102 *əgga həm ba-ħarħəm*
 PAST meat PF-plentiful
 Meat was plentiful. (2007-12-06/AM)

A semantically related causative is *kəttəʔ* “cause to be much/many” (< M. Ar.)

But whereas *həybbu* is used both adverbially and adnominally, and applies both to count nouns and mass nouns, its opposites distinguish more categories. *=f=yu* “some” (*=fu* “one” + *yu* PL; see also NP features: Definiteness) only entails the existence of elements of the set to which the statement applies, but is readily used with the implication of “few, not many”, eg:

4.103 *tsəksi həybbu, bə=yu. bəʃʂəħ əgga zman ʃaʔ af=yu*
 now many, person=PL. but PAST old days just
 one=PL

Now they are many, the people. But in the old days there used to be just a few.
 (2007-12-30/17)

For “little” (with mass nouns), the adjective *kədda* “little” is used attributively, with the same polysemy as in English and as in other Songhay languages such as Koyra Chiini (Heath 1999a:94); it is normally combined with the plural ending, and often with *=f=yu*:

4.104 *yə-m-mūn=a.tsa ir=f^w kədda=yu*
 1P-IRR-pour=3S.LOC water=one little=PL

We would pour in a little water. (2007-12-22/13)

4.105 *i-mmūn=a.ka lfarina=f^w kədda=yu*
 3P-pour=3S.LOC flour=one little=PL

They would pour in a little flour. (2008-02-05/17)

4.106 *nə-m-dza=a.s laŋəʔ kədda=yu*
 2S-IRR-put=3S.DAT fertiliser little=PL

You would put for it a little fertiliser. (2008-01-01/08)

The adverb “a little, a bit” is the Arabic borrowing *šwəy/šwi* (< M. Ar. *šwiyy-a*), eg:

- 4.107 *nə-m-dzam-a* *ur=ka* *a-m-dəffa* *šwəy*
 2S-IRR-put-3S fire=LOC 3S-IRR-warm bit
 You put it on the fire and it warms up a bit. (2007-12-22/11)

Predicatively, *kədda* may be used:

- 4.108 *an* *tsirs* *a-mm-iʕzər,* *bəʕʕəħħ* *a-kkədda*
 3SGen butter 3S-IRR-form[?], but 3S-little
 Its [camel's] butter will form, but it's [only] a little. [in context: camel milk yields little butter, so people usually drink it instead of making butter with it.] (2007-11-15/05)

or the Arabic borrowing *iqəll* “become scarce” may be used:

- 4.109 *aha* *tsəksi* *küllš* *a-yqəll*
 as for now everything 3S-scarce
 As for now (in contrast), everything has become scarce. (2007-12-30/17)

4.2.1.7.2 Universal quantifiers

All of these forms derive from Arabic. Two syntactically distinct ones derive from Arabic *kull-* “all, each, every”. *kʷəll* “all, at all” can occur adverbially:

- 4.110 *ʕar* *tsiru=f^v* *kədda, a-s-sab-gəz* *hibbu küll*
 just bird=one little, 3S-NEG-PROG-fly much all
 Just a little bird, it doesn't fly much at all. (2008-01-01/05)

It can also occur adnominally, either before or after the whole noun phrase. Its NP, if countable, is normally plural.

- 4.111 *kʷəll tsiru=yu? ʕa-m-səmm-i?*
 all bird=PL 1S-IRR-name-3P
 All the birds? I should name them? (2007-12-30/19)
- 4.112 *kʷəll kʷara, ləxbə a-mm-ikun dzuγd tsuṃa a-kkani*
 all Kwara/village news 3S-IRR-be there locust 3S-sleep
 For all Kwara, the news will be where the locusts sleep. (2007-12-22/11)

vs:

- 4.113 *wəlla i-bbəγ-bəγ=ni.s nn lkisan küll*
 or 3P-break-REDUP=2S.DAT 2S.GEN cups.PL all
 Or they'll break all your cups (2007-12-22/12)
- 4.114 *mənʕand yan ʕamm n iz=yu küll*
 from 1P.GEN uncle GEN son=PL all
 from all our cousins (2007-12-22/12)
- 4.115 *lhwayəj fts=yu küll a-b-tsku-ndz-i a-b-ənyə-i*
 things.PL bad=PL all 3S-IMPF-be caught-CAUS-3P 3S-IMPF-eat-3P
 All bad things, it catches and eats them. (2008-01-01/8)
- 4.116 *tsiru kədda küll əgga ʕa-b-hidz-i*
 bird little all PAST 1S-trap-3S
 I used to trap all little birds. (2007-12-06/AM)

kʷə-/kʷəll- “each, every” directly precedes the noun, and is cliticised to it. The noun phrase is singular.

- 4.117 *kū-zzəγd əgga afu a-m-bə, a-m-dər a-m-isərḥ-a*
 every-day PAST one 3S-IRR-EXIST 3S-IRR-go 3S-IRR-graze-3S
 Every day there would be someone to go graze it (the herd). (2007-12-30/19)

- 4.118 *kũ-f^w=s* *a-b-mm^wũn* *an* *zlafət=tsa,* *an* *tsu=tsa*
 every-one=DAT 3S-IMPF-pour3S.Gen dish=LOC 3S.Gen plate=LOC
 For each one she pours (the soup) into his plate, his dish. (2007-12-16/02)
- 4.119 *kũ-ffu* *an* *išn* *a-m-dər=a.s*
 every-one 3S.GEN ovine 3S-IRR-go=3S.DAT
 Each person, his ovine would go to him. (2007-12-30/19)
- 4.120 *k^wə-tsiruw=γ* *n-ba-b-tən* *a-m-g^wə*
 every-bird=REL 2S-PF-IMPF-rise 2S-IRR-stay
 Each bird you get up for would stay. (2007-12-06/AM)
- 4.121 *kũ-zzəydi* *wəlla* *k^wə-ššbəħ* *ʕamdər* *lxədmət=si*
 every-day or every-morning 1S-IRR-go work=DAT
 Every day, or every morning, I go to work. (2008-01-03/06)

Mainstream Songhay languages use an Arabic borrowing for both purposes: KC/KS *kul*, HS *kûl*, TSK *kúlù* (Heath 2005b:126), Zarma *kúlù* (Tersis-Surugue 1981:110). Within Northern Songhay, Tadaksahak has *kullú* “each”, and Tasawaq has *àlkúl* “every”. In all of the above except Tasawaq, the quantifier consistently comes at the end of the noun phrase, following any adjectives, numbers, or demonstratives, eg:

gá:sú *bé:rì* *kúlù*
 calabash big all
 “toute la grande calebasse”
 all of the big calabash (Tersis-Surugue 1981:111)

gá:sú *hínká* *kúlù*
 calabash two all
 “toutes les deux calebasses”
 both the big calabashes (*ibid.*)

hàŋ kúlú à w ↑ká:
 day all 3SgS Impf come

Every day he/she comes. (Heath 2005b:126)

This corresponds to the post-nominal order attested only with “all” in Kwarandzyey, which is best explained as a retention, and would be unexpected on the basis of Arabic alone. On the other hand, the pre-nominal order attested for both “all” and “every” is better explained as a later copying from Maghrebi Arabic, where it is its normal position: *küll yum* “every day”, *küll aṭ-tyur* (all DEF-bird.PL) “all the birds”. The form *k^wə-*, with irregular dropping of the *l*, is likely to derive specifically from contact with Middle Atlas Tamazight, which has both *ku* and *kul*, eg *ku tigəmmi* “chaque douar”, *ku y ass* “chaque jour”, *ku yid* “chaque nuit” (Taïfi 1991). A possible challenge to this account is Tasawaq *àlkúl* “every”, also described as coming NP-initially:

gá i Ø-té higyó àlkúl bàró Ø-káw-kàt à-n wánè
 when 3p PF-arrive home every person PF-go-hither 3s-GEN that.of
 “when they went home, everybody went to his own” (Kossmann 2003)

But both the presence of the Arabic article *al-* and the position confirm that this must have been borrowed from Arabic (perhaps via northern Berber) separately from the other Songhay languages. No evidence exists that “sedentary Northern Songhay” is a valid genetic subgroup, so it is most economical to assume separate Arabic influence in each place (possibly via Berber in Tabelbala.)

“Whole, all” is handled with the Arabic borrowings *kaməl / kamlin* (M. Ar. m. / pl.)

These may occur adverbially:

4.122 *šibbu, bbəzbəz, kamlin uyu=i=ba*
 warbler wagtail whole.PL DEM=PL=EXIST
 Warblers, wagtails, there are all these. (2008-01-01/08)

Within an NP these follow the noun:

4.123 *xǔdz a-ddər zəyd kaməl a-yəsɾəḥ...*

when 3S-go day whole 3S-graze

When it has gone a whole day grazing... (2007-11-15/05)

4.124 *llil k- kikk kaməl əgga tsarğa a-b-zru*

night[Ar.] night whole PAST canal 3S-IMPF-run

For the whole night the canal would flow. (2007-12-30/17)

These are not recent borrowings – *kamla* (Ar. f., or wrongly segmented for *kaməl*?) is attested in CANCEL (1908:347):

<thar' azemth kamla adama arbâ iam xa>

**tsaɣzəmts kamla ʕa-ddzam-a rəbɕ-iyam=ka*

road whole.F 1S-do-3S four-days=LOC

“Pour tout le trajet, il a fallu quatre jours.”

The whole road I did in four days.

This is not found in southern Songhay, but is shared with Tadaksahak, which has *káamil* “all” (Christiansen-Bolli 2010:149):

...hár jé i-múudar-an óoda káamil i=hun(u)-án sénda ka.

until only pl-animal-pl dem all 3p=leave-all dem.far loc

“... as soon as all these animals were dead there.” (Tadaksahak)

Since Arabic is not currently a major influence on Tadaksahak, it is possible that this borrowing dates back to proto-Northern Songhay or some subfamily thereof. However, if so, the presence of Arabic feminine and plural forms of it in Kwarandzyey still has to result from more recent contact.

4.2.1.7.2.1 Universal quantifier compounds

While *kʷəll* “each, every” appears to be productive, some compounds featuring it must be regarded as fixed phrases. *külləš/küllši* involves an Arabic word, *-ši* (originally “thing”), with no independent use in Kwarandzyey:

4.125 *bəkri* *əggə* *kʷəllši* *a-b-dzyəy*.
 long ago PAST everything 3S-IMPF-speak
 Long ago everything [all animals] used to speak. (2008-02-05/9)

4.126 *tsayttsa* *bə=a.si,* *a-b-bəy* *küllši*
 wisdom EXIST=3S.Dat 3S-IMPF-know everything
 He has wisdom, he knows everything. (2008-01-19/08)

kʷəllha “everyone” looks like a derivative of *ha(ya)* “anything”. But this is semantically problematic, and Figuig Berber uses the same form, *kulha*, with the meaning “tout le monde” (Kossmann 1997:295). Since there is no evidence of Songhay influence on Figuig, I presume that this is an Arabic compound with *-ha* (3FSg), probably with implicit reference to *ən-nas* “the people” or *əd-dənya* “the world”, which can both take feminine singular agreement.

4.127 *kʷəllha* *(a)-m-ts* *aγ=a* *mməy* *lkas=γu*
 everyone (3S)-IRR-say I=FOC own cup=DEM
 Each person will say “This cup is mine!” (2007-12-22/12)

4.128 *kʷəllha* *(a)-m-yər* *a-m-nəggəz* *an* *lkas=ka*
 everyone (3S)IRR-return 3S-IRR-jump 3S.GEN cup=LOC
 Each person will come back and jump on his cup. (2007-12-22/12)

4.2.1.7.3 Existential quantifiers

In Kwarandzyey, specific indefinites are marked with “one” (=fu), irrespective of number:

- 4.129 *a-ttən ayəm=fu ndza zzabda ndza ssərdin*
 3S-fill bread=one with butter and sardine
 He filled a piece of bread with butter and sardine. (2007-12-06/AM)

- 4.130 *gga yə-mm-ikna bʷəndz=fu, bʷəndz=fu məssəx*
 PAST 1P-IRR-make stick=one stick=one thus,
yə-m-ɖəb-ndz(a)=a.s zga=f=yu
 1P-IRR-wear-CAUS=3S.DAT cloth=one=PL
 We used to make a stick, a stick like this, and put some clothes on it. (2007-12-28)

Non-specific indefinites are unmarked:

- 4.131 *tsazəmmart lüxxüdz a-hay indza tsəksi,*
 ewe when 3S-give birth COM nanny-goat
tsazəmmət n izi fissaʃ nə-m-ga a-bya
 ewe GEN child quickly 2S-IRR-find 3S-big
 When a ewe gives birth along with (at the same time as) a nanny-goat, you'll quickly find the ewe's child has gotten big (before the goat's child). (2007-11-15/05)

The use of “one” to mark specific indefinites, particularly in introducing salient referents, is widespread across Songhay, Berber, and Maghrebi Arabic alike, as well as being cross-linguistically common; North African influence need not be appealed to for explaining it, in light of Songhay examples as far apart as Tondi Songway Kiini:

áhǵá hǎrù fǒ:´ kóy´ hó:
 well then man one go hunt

“A (=another) man went hunting.” (followed by “The man...”) (Heath 2005b:262)

Koyraboro Senni:

yow *foo* *kaa* *koyr-aa* *ra*
 stranger one come town-Def Loc
 “a stranger had come to the town” (Heath 1998b:152)

and Tasawaq:

àsàbí fǒ-yó té
 child one-PLcome
 “des enfants sont venus.”
 Some children came. (Alidou 1988:76)

The same applies to the lack of marking on non-specific indefinites, cp Tasawaq:

bàṅgù kúkú bára né
 well long EXISThere
 “il y a un long puits ici”
 There is a deep well here. (Alidou 1988:58)

In non-positive clauses, Kwarandzyey marks the existential variable with *haya / ha* “any”, derived from Songhay “thing”, cp KC/KS *haya*, TSK *hàyà / hà:-*, Zarma *hày*. However, its shift to mean “any” is unprecedented in Songhay, and is a clear calque on western Maghrebi Arabic *ši* and/or northern Berber *kra/šra/ša*, both originally meaning “thing” but extended to mean “any/some” with an indefinite non-specific nominal complement. Whereas *ši ...* and **kra n ...* precede the variable, *haya* follows it. This would make sense if they are interpreted as instantiating the genitive construction (“any of...”) – but then one would expect it to be preceded by *n* in Kwarandzyey just as it is followed by it in Berber, which is not the case.

4.131 *laḥqar ha s-ba a.s walu*
 mind **any** NEG-EXIST 3SDat no
 He has **no** sense, no. (2008-02-05/17)

- 4.132 *ndza man hɑ bɑ...*
 if fat **any** EXIST...
 If there's any fat... (2008-02-05/17)

This is also used alone nominally, meaning “anything”, or adverbially, meaning “(not) at all”; the latter usage is also a likely calque on the obligatory use in Maghrebi Arabic and northern Berber of *ši* / **kra* with the negative, perhaps reflecting an earlier stage in Jespersen's cycle (Jespersen 1917):

- 4.133 *yak hɑ sɑ-ddɑ-ni?*
 right? **any** NEG-hurt-2S?
Nothing has afflicted you, right? (2008-02-05/17)

- 4.134 *a-sɑ-byɑ hɑyɑ*
 3S-NEG-big **any**
 It's not big **at all**. (N6p50)

“Anyone” is suppletive *baɣu*, whose etymology is unclear (perhaps related to *ba* “person”):

- 4.135 *bɑʃʃɑħ tsɑksi bɑy s-kɑ-ddzɑ hɑyɑ i-bɑɣ ɡ^{vɑ}=yɑ*
 but now **anyone** NEG-anymore-do anything 3P-want sit=VN/PL
 But now **nobody** does anything any more, they prefer sitting around. (2007-12-30/17)

4.2.2 The mass-count distinction

In Kwarandzyey, there is no morphological distinction between mass and count nouns. As in Arabic, many nouns, notably those denoting produce, can behave as mass nouns, taking number-neutral reference with no plural marking, eg:

- 4.136 *ɑɾ=yɑnɑ a-b-zzɑnzɑ tsini*

man=DEM.DIST 3S-IMPF-sell date
 That man sells dates (N6p54)

vs.

4.137 *a-b-zzənza* *yu=yu*
 3S-IMPF-sell camel=PL
 He sells camels. (N5p60)

Unlike Arabic, however, their count forms are consistently identical to their mass forms, not marked by any special morpheme:

4.138 *a-nn(a)=a.si* *tsin* *xəmsa*
 3S-give=3S.Dat date five
 He gave him five dates. (N6p54)

4.139 *ʕa-m-na=ni* *kawkaw* *inza* *hənn.u=yu*
 1S-IRR-give=2S peanut three good.ADJ=PL
 I'll give you three nice peanuts (N6p58)

4.2.3 Syntax

4.2.3.1 Quantifying count nouns

4.2.3.1.1 Integers

In Kwarandzyey, the ordinary numbers 1-10 and 100 immediately follow the noun, which combines freely with possessors. “One” cliticises to the noun.

4.140 *amaḍ =f^w* *bya*
 acacia=one big
 a big acacia

4.141 *in* *ʕamm* *n* *iz=fu*
 3P.GEN paternal uncle GEN son=one
 one of their cousins (2007-12-22/Yahiaouis/11)

4.142 *yu* *miyya* *bq* *ɣəy.si*
 camel hundred EXIST 1S.DAT
 I have 100 camels. (N1p195)

“One” may combine with the plural marker *yu* to mean “some”, eg *bq=f=yu* “some people” (see Fuzzy quantifiers above.) Otherwise, the NP plural marker *yu* is absent from the number+head noun complex, but appears at the end of the noun phrase if any adjective or demonstrative follows the head noun.

4.143 *ləmbu əynza bya=yu*
 garden three big=PL
 three big gardens (N4p23)

4.144 *ʕa-m-na.ni* *kawkaw* *inza* *hənn.uw=yu*
 1S-IRR-give.2S peanut three good.ADJ=PL
 I will give you three nice peanuts (N6p58)

4.145 *kq* *inza=dz=i*
 hit three=ANA=PL
 those three hits (N6p109 – *yu* > *i* before verbal agreement)

Where the head noun in such constructions has distinct singular and plural forms (see 2.3.2) – as with *tsaqərḏəs* and *abərḏən* below, whose internal plurals are *tsiqərḏəsən* and *ibərḏənən* – only its singular form can be used:

4.146 *tsaqərḏəs* *əynka*
 paper.SG two
 two papers (N5p84)

- 4.147 *ʕa-ggwa abərɔdən ʕəʃra*
 1S-see sparrow.SG ten
 I saw ten sparrows. (N1p195)

This agrees with the data available from 1908, where the numbers 1-5 (at least) followed the noun (Cancel 1908:329), and the adjective followed such numbers:

<dab fou qoari> “vêtement blanc”
 **dəb=fu kʷarəy*
 clothing=one white
 “a white garment” (Cancel 1908:342)

Other numbers, as well as all cryptic numbers, precede the noun, which is placed in the singular.

11-19 are analytically ambiguous; when quantifying a noun they appear in forms ending with *-ən*. This could readily be identified with the Kwarandzyey genitive marker *n*; but, in fact, they take these forms when quantifying nouns in Maghrebi Arabic too, which has no genitive marker *n*. There is no conclusive evidence for which analysis – genitive marker or suffix – more closely corresponds to speakers' own analysis; analogy to numbers above 100 would suggest a genitive analysis, whereas knowledge of the source language, comparison with measure constructions, and analogy to numbers above 100 would suggest a suffix analysis. For Kwarandzyey-dominant speakers, I will tentatively opt for the former analysis, as probably being more immediately accessible to them in their childhood before they fully acquired Arabic.

- 4.148 *məs=ɣu ħdaʕš n ləktaḅ a-ba a.ka*
 room=this eleven GEN book 3S-EXIST it.LOC
 There are 11 books in this room. (N1p195)

For 20-99 there is no evidence of the use of a genitive linker. All of these numbers end

in *n*, making it hard to be certain in many environments; but if there were a genitive linker a geminate should still have been audible at least before nouns starting with a vowel, such as *aru* below:

4.149 *bq tsmanya walla bq řařra walla řařrin lhaybuř*
 person eight or person ten or twenty children
 eight or ten people or twenty children (2007-12-22/13)

4.150 *waħad u-řařrin gungwq bq=řay.si.*
 twenty-one chicken EXIST=1S.Dat
 I have 21 chickens. (N1p195)

4.151 *waħad u-řařrin aru*
 twenty-one man
 21 men (N4p15)

4.152 *xamsin aru*
 fifty man
 fifty men (N4p15)

4.153 *əgga xamsin kas bq=řay.si*
 PAST fifty cup EXIST=1Sg.DAT
 I used to have 50 cups. (N1p196)

Numbers above 100 and cryptic numerals are unambiguously linked through the genitive construction:

4.154 *kwarə=řu miyya w-xamsin n bq bq=(a).ka*
 town=DEM hundred and-fifty GEN person EXIST=3S.LOC
 There are 150 people in this town. (N1p195)

4.155 *aləf n aru*
 thousand GEN man
 a thousand people (N4p16)

4.156 [*nən kəmb fu nd̥a inka] n aru*
 2S.GEN hand one and two GEN man
 seven men (cryptic) (N4p15)

The same seems to apply to *mahəyni* “how many?”:

4.157 *ts=a.s tsuɣa- mahəyn n tsiru əgga nə-m-sku-ndza*
 say=3S.DAT what how many GEN bird PAST 3S-IRR-be caught-CAUS
 Tell him what- how many birds you used to catch (2007-12-22/Yahiaouis/11)

4.158 *mahəyn n išən ndz-a-qqūs?*
 how many GEN ovine 2P-PF-slaughter?
 How many sheep/goats have you slaughtered? (2007-12-22/Yahiaouis/13)

With cryptic numbers the NP is once attested with external plural marking, but even the same speaker more frequently used singulars:

4.159 [*nən kəmb=fu] n ar=yu*
 2S.GEN hand=one GEN man=PL
 five men (cryptic) (N4p15)

In summary:

Table 55.

	Source	Position	Linker	Head number (for nouns with inherent number)	NP number (with following modifier)
1	Songhay	Post	∅	Sg	Sg
2 - 3	Songhay	Post	∅	Sg	Pl
4-10	Arabic	Post	∅	Sg	Pl
11-19	Arabic	Pre	-ən (n?)	Sg	Sg
20-99	Arabic	Pre	∅	Sg	Sg
100	Arabic	Post	∅	Sg	Sg ¹¹
> 100	Arabic	Pre	n	Sg	Sg
Cryptic	Songhay (phrasal neologisms)	Pre	n	Sg (occ. Pl)	Sg

Synchronically, none of the three syntactic behaviours observed for numbers assigns them conclusively to another word class. Numerals under 10, and 100, share with adjectives the property of following the noun while preceding demonstratives and plural affixes; but whereas the order of adjectives relative to each other is flexible, numbers always precede adjectives. Numerals 11-99 cannot be seen as nouns in apposition, since the following noun is not pluralised; they could perhaps more fruitfully be compared to prenominal quantifiers such as *wara* “even/any” and *kʷəC* “every”. Numerals above 100 appear similar to measure constructions; *aləf* could consistently be argued to be a measure noun, but for *miyya* the fact that it appears postnominally when alone seems to rule that out. One way to treat them would be to take seriously the common Belbali claim that “Kwarandzyey has no numbers above 3”, and consider this whole system as grammaticalised code-switching: single-morpheme numbers appear in their Songhay position, while multimorphemic ones trigger Arabic islands to be completed with Arabic syntax. *aləf* behaves as a measure because in Arabic it is a measure, while *miyya* does not because its syntax with 3-9 (appearing in the singular) breaks Arabic rules for measures.

Diachronically, the behaviour of low numbers corresponds exactly neither to Songhay

11 The one example elicited for 100 with a following modifier has an unusual prenominal position for 100, making it potentially unrepresentative.

(where they follow rather than precede adjectives) nor to Arabic or Berber (where they precede the head noun.) In Arabic, numbers may follow the head noun in definite constructions (“the ten men”); but in such cases, the head noun always appears in the plural, which is not acceptable in Kwarandzyey. For numbers above ten apart from 100, the syntax of those that take *n* is immediately reminiscent of Berber (Galand's groups IA and IIB), while that of those that don't take it is indistinguishable from Arabic, or from some Berber languages (groups IB and IIA.) However, the whole system must be considered in the light of comparative Songhay data: is this influence Kwarandzyey-specific, or does it date to an earlier stage?

4.2.3.1.1.1 Syntax of numbers across Songhay

In southern Songhay, numerals irrespective of size follow adjectives but precede demonstratives and postpositions, and the noun phrases appear without plural marking:

har jeen-o hiŋka
 man old-ADJ two
 two old men (Koyra Chiini – Heath (1999a:86))

woy beeri hiŋka
 woman big two
 two big women (Koyraboro Senni – Heath (1999b:121))

allaara woy-čindi-guu; allaara woy-ye-čindi-guu
 riyal fifteen riyal seventy-five
 “fifteen riyals... seventy-five riyals” (Koyra Chiini – Heath (1998a:86))

alhoor-ije joŋgu; allaara jember foo nda joŋgu guu
 limestone-child hundred riyal 1000 one and hundred five
 “100 limestone blocks; 1500 riyals” (Koyra Chiini – *ibid.*)

allaara iiye nda jere

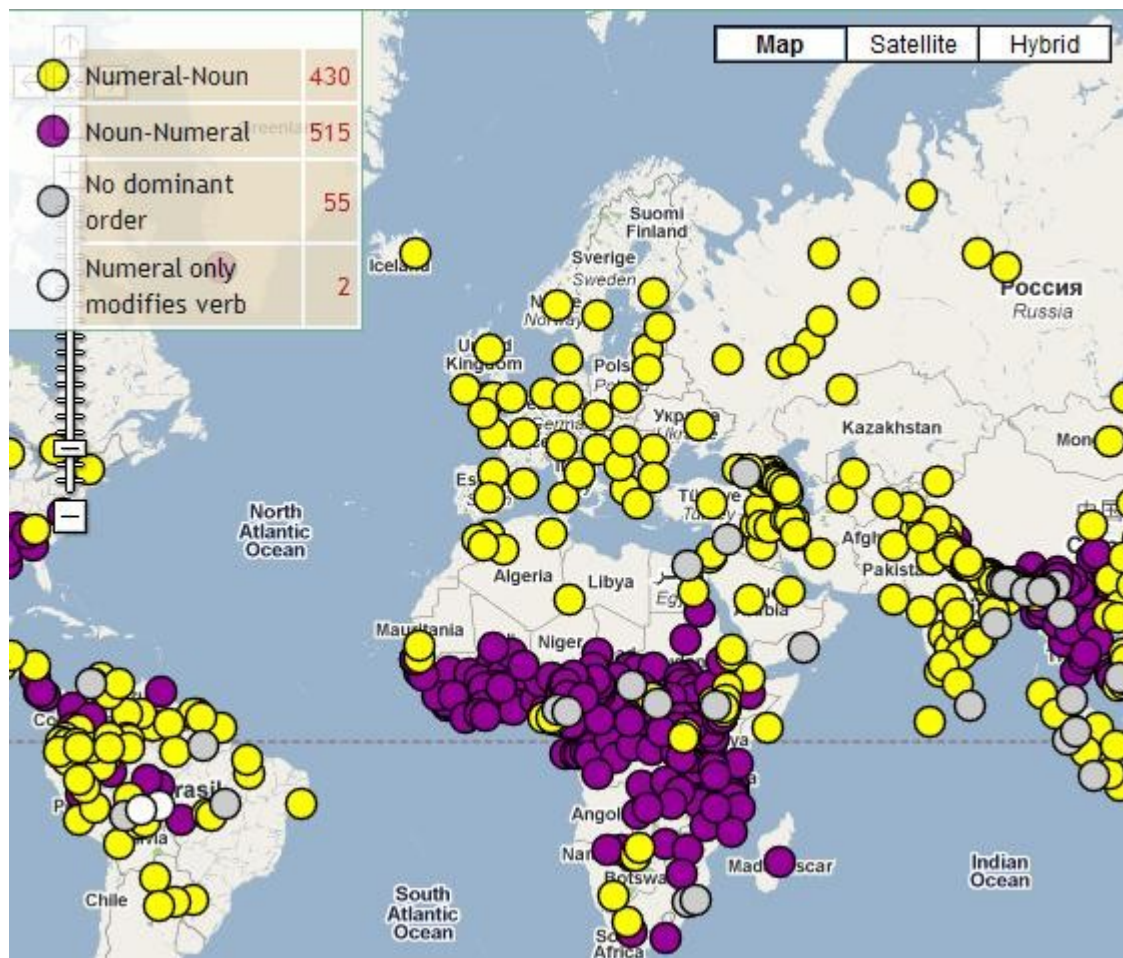
riyal seven and half
 “seven and a half riyals” (Koyra Chiini – Heath *ibid.*)

jirbi woy-čindi-guu
 day fifteen
 “fifteen days” (Koyraboro Senni – Heath (1998b:119))

jiiri zangu hiŋka
 year hundred two
 “200 years” (Koyraboro Senni – Heath (1998b:143))

This pattern is overwhelmingly dominant in sub-Saharan West Africa, as shown by the following map from WALS (Dryer 2008), and rare or unattested in North Africa, Europe, and the Middle East:

Figure 7.



In Northern Songhay, only the lowest numbers are retained from Songhay (1-4 in Tasawaq, 1-2 in Tadakshak); higher numbers are Arabic or Berber borrowings. In both Tasawaq and Tadakshak, however, numbers 1-10 follow the head noun:

Tadakshak (Christiansen-Bolli 2010:158):

[bor-én kaarád] ə-b-guŋg(ú) [i-múnas hiŋká]
 person-pl three imperf-lead pl-camel two
 “(Here are) three persons leading two camels.”

i=mmáy [í-n nan-én hiŋká]
 3p=have 3p=gen mother-pl two
 “They had their two mothers.”

Tasawaq (Kossmann 2003):

bàⁿgù hínká “two wells”
bàⁿgù sábhàghà “seven wells”
bàⁿgù ghàsàrà “ten wells”

Emghedesie, the extinct language of Agades, differed little more than dialectally from Tasawaq, and the examples available (all involving numbers 1-10) confirm the same rule (starred lines indicate my reconstruction of the pronunciation and morpheme boundaries based on comparative evidence):

<kae fo>
 **kay fò*
 time one
 “one time” (Barth 1851:187)

<Boró fò barénnu amai is·s·e'ínka>

**boro fo bara no a-may izze inka*
 man one EXIST there 3S-have son two

There was a man who had two sons. (Barth 1851:188)

<wai ró anne rai gashí ínka>

**way yo a-nna γay gaši inka*
 womanthis 3S-give 1S cheese two

This woman gave me two cheeses. (source translation: “this woman (she) gives me three cheeses”) (Barth 1851:183)

<áttén áni haú 'táki>

**γa-ti-na ni haaw taaki*
 1S-FUT-give 2S cow four

I will give you four cows. (source translation: “thou givest me four cows”) (Barth 1851:183)

<s·ámbar gáshera>

**zambar γašara*
 thousand ten

“ten thousand” (Barth 1851:184)

The few examples available for Tagdal/Tabarog (Rueck & Niels Christiansen 1999:26) fit the same pattern:

tondabe karad “trois tires”

bora fo “un homme”

Such numbers seem to follow adjectives, as in southern Songhay:

Tasawaq:

wày káyà-fò

womansmall-one

“a young woman, one young woman”

Tadaksahak:

<i>[arw-én</i>	<i>cind-én</i>	<i>hiŋk(á)]</i>	<i>i=báara</i>
man-PL	IND-PL	two	3p=be
(there) were two certain men			

It is not clear that the previous example contains a true adjective, but in Tadaksahak, they follow even postpositions (no data is available on this for Tasawaq):

<i>[zayr-én</i>	<i>be</i>	<i>kaarád]</i>
day-PL	LOC	three
in three days		

The position of numbers closer to the noun than adjectives in Kwarandzyey thus appears unique within Songhay. It is also typologically very unusual, violating Greenberg's universal no. 20 (Greenberg 1963b:86; Rijkhoff 2002:273); Rijkhoff explains this order away in some of the few languages to permit it as resulting from pragmatically based fronting or from the use of appositive structures in which any of the adjective, noun, and number can stand alone as a head, but in Kwarandzyey neither explanation would be adequate, as this order is obligatory for 1-10 and 100 and as normal Kwarandzyey adjectives cannot occur without a head. If it coincided with Arabic or Berber, there would thus be a very strong argument for considering it influence – but in fact throughout both languages numbers normally precede the noun while adjectives follow. In Arabic when the NP is definite the number does follow the head, but the relative order of adjective and number is then flexible. It must therefore be taken as an unusual innovation, not as the result of contact.

Again in both Tasawaq and Tadaksahak, higher multiples of 10 instead precede the noun, and are linked to it by genitive *n*:

Tadaksahak:

táafinda *n* *zayrí*
 twenty GEN day
 twenty days

ṭáasay-t-ə-mérw-in *ən* *borá*
 nine-F-PL-ten-PL GEN person
 ninety people

Tasawaq:

ghàssirín in ṭarrà̀y “twenty roads”
xàmsín in bà"̀gù “fifty wells”
téémàdá n bà"̀gù “a hundred wells”

The same seems to be true of Tagdal/Tabarog (Rueck & Niels Christiansen 1999:26):

akos-temerwin n kilo “forty kilometres”
sənat tumə̀rəwən n ahat “for twenty days”

Additive higher numbers between multiples of ten in all three languages are formed using the Songhay conjunction *ndá* “with” (in contrast to Kwarandzyey, where such numbers are borrowed verbatim from Arabic): eg Tadaksahak *maará (ə)nd(a) a-ffó* “11”, *ṭ-ə'-mmad hinká (ə)nda fammúf-ə-tə-mérwin ənda taaşá* (100 two and 50 and 9) ‘259’; Tasawaq *bà"̀gù ghàsàrà ndá à-fó* “eleven wells”. In Tasawaq, the units part of such numerals is syntactically independent of the rest: it must follow the noun, whereas the tens and above follow or precede depending on whether they are >10 or not:

ghàssirín *in* *bàngù ndá* *à-fó*
 twenty GEN well and one
 “twenty-one wells”

Tagdal appears to behave like Tasawaq:

akos temerwen n awatay a-may enda sadis
 four tens GEN year 3S-have and six
 “il y a quarante-six ans”

However, Tadaksahak does not; all numbers 11-99 precede the noun. No natural examples are available, but a translated text includes cases such as:

a-mmay țammad šaadiš n awatay
 3S-have hundreds six GEN year
 “He was 600 years old.” (Christiansen, pc)

The comparative situation across Northern Songhay, as far as can be provisionally determined from the scanty materials discussed, may be summed up as follows.

(Abbreviations: S=Songhay, B=Berber, A=Arabic, C=Composite.)

Table 56.

	Kwarandzyey		Tasawaq		Tadaksahak		Tagdal		
	Lexical source	Syntax	Lexical source	Syntax	Lexical source	Syntax	Lexical source	Syntax	
1	S	Post+Sg	S	Post+Sg	S	Post+Sg	S	Post	
2								?	
3								B	Post+Pl
4				S	?				
5-10	A	Pre+Sg	A				B	?	
11-19			(ambig)	C	Post+Sg	C	Pre+Sg	C	?
20, 30... 90			Pre+Sg	A	Pre+Sg	B	Pre+Sg	B	Pre+Sg
21...29, ...			(direct)	C	Split+Sg	C	Pre+Sg	C	Split+Sg
91..99									
100		Post+Sg	B	Pre+Sg	B	Pre+Sg?	B	?	

Clearly proto-Northern Songhay, like proto-Songhay, had postnominal numerals up to 10; remarkably, this seems to have been preserved throughout the family irrespective of lexical borrowing. Moreover, all four languages agree on placing the tens from 20 to 90 prenominally; this aspect of the syntax may therefore date back to the earliest layer of Berber influence in Northern Songhay (although independent parallel development is possible, given the shared stimulus of contact.) The treatment of numbers between the tens, on the other hand, can only be attributed to Kwarandzyey-specific developments, since Tadaksahak is more closely related to Tagdal than either is to Kwarandzyey. Kwarandzyey is the only Songhay language to have borrowed lexical forms of numbers for between the tens, and the only one to have lexical numbers between the tens which are not predictable from the units. In this sense, the numbers between the tens do not correspond to any Songhay lexical items, just as *mən* “from”, when used to mark source, does not correspond to any Songhay adposition; it is not surprising that they should retain Arabic grammar.

4.3.3.1.1.2 Analysis

The key difference between the two patterns observed lies in whether the number is treated as an modifying adjunct, following the noun or noun phrase directly, or as a nominal head, linked to the NP through a genitive construction with *n*. Across northern Songhay, low numbers are treated as the former; higher ones as the latter (apart from 100 in Kwarandzyey, and apart from the missing *n*'s in mid-range Kwarandzyey numbers.) Tasawaq may be seen as having no lexical entries for inter-decade numbers higher than 10, since these are syntactically separable; so all lexical numbers in these languages higher than 10 are nominal heads. But this does not correlate to the observed sources of borrowing. Tadaksahak numerals are borrowed from Berber above 2; Tasawaq numerals from Arabic above four and from Berber above 99; and Kwarandzyey numerals from Arabic above three. In both Arabic and Berber, all numbers (except in Arabic “one” and only in classical Arabic “two”) behave like nominal heads, preceding the noun and in Berber being linked to it with genitive *n*. If this syntactic property is lexically determined, all the borrowed numerals should behave

like nominal heads, not just the ones above 10. The stability of the pattern across different Northern Songhay languages with different borrowing patterns suggests that the syntactically relevant attributes of each number has been retained from Proto-Northern Songhay whether the phonetic form of each number comes from Songhay, Berber, or Arabic. The treatment of numbers above 10 as nominal heads is probably attributable to Berber influence; but if so, this influence cannot be related directly to lexical borrowing.

This contrasts strikingly with the behaviour observed in another zone where the Noun-Number typology of sub-Saharan Africa is under pressure from large-scale Arabic bilingualism: southern Egypt and the Sudan. In the few cases for which descriptions are available, borrowed and inherited numbers coexist, but each tends to obey its source language's syntax. In Sudanese Fulfulde (Abu-Manga 1986:194), “ninety-nine towns” is either *galluuje tis'iin-e-joweenayi* (with the Fulani numeral, order, and number) or *tis'a-wu-tis'iin galluure* (with the Arabic numeral, order, and number). Likewise, in Sudanese Hausa (Abu-Manga 1999:132) “six cows” is either *sāniyā/shānū shida* (with the Hausa numeral and Hausa order) or *sitta shānū/sāniyā* (with the new Arabic numeral and order). In Egyptian Nubian, for non-competent bilinguals: “The correct Nubian word order (noun + numeral) was often affected by the correct Arabic phrase structure (numeral + noun)... the lexical substitution of Arabic for Nubian numerals is accompanied by structural interference: lexical items are borrowed together with their characteristic syntax... Departures from Nubian syntax when no Arabic items were present were always rejected as ungrammatical by competent bilinguals.” (Rouchdy 1991:25) However, the author's examples indicate that noun + numeral is also possible for Arabic numbers there.

With adjectives, we observed a strong preference for simultaneously preserving source language lexical properties and fitting existing borrower language preferences. Here, on a larger scale than for the few nominal adjectives of Kwarandzyey, we see clear evidence that, for meaningful items if not for functional ones, borrower language properties of equivalent items can override source language ones; etymology is not destiny.

4.3.3.1.2 Fractions

Fractions are treated as nouns in their own right, following the noun in a genitive construction when on their own, eg *agəddəd n ifri* “half a finger” (N5p60). A fraction is combined with a whole number through conjunction:

4.160 *kas əynka ndz ufri*
 cup two and half
 two cups and a half (N4p16)

Both of these are true in other Songhay languages, eg Koyraboro Senni *koyr-aa jera f-aa* “town-DEF half one-DEF” = the half of the town (Heath 1998b:180), Koyra Chiini *allaara hiŋka nda jere* “riyal two and half” = 2½ riyals (Heath 1999a:92).

4.3.3.2 Quantifying mass nouns

The construction is: measure – *n* – noun, using the genitive particle but with the opposite of the expected order.

4.161 *lkas=f^w n atsay*
 cup=one GEN tea
 a cup of tea (N5p198)

4.162 *tlatsa kilu n haṃu*
 three kilo GEN meat
 three kilos of meat (N5p198)

This construction is equally applicable whether the noun being quantified is inherently a mass noun or a count noun, as long as the measure is present:

- 4.163 *Ḥarṃət=f^w n yu*
 herd=one GEN camel
 a herd of camels (N5p198)

This construction is strongly reminiscent of the Berber structure seen for Siwi and found further west, eg Figuig:

- ta-xərṛub-t n w-am-an*
 FSg-carob (measure)-FSg GEN OBL-water-PL
 a carob-measure of water (Kossmann 1997:371)

Unfortunately, the construction in question is not well documented in Songhay, but in Koyraboro Senni, examination of texts indicates the opposite order, as might be expected:

- taba fadda foo*
 tobacco sack one
 a sack of tobacco (Heath 1998b:226)

- wuraa mutukal zangu*
 gold mithqal hundred
 one hundred mithqals of gold (Heath 1998b:14)

This suggests that the order and construction used in Kwarandzyey represents Berber influence.

4.3.4 Distributive use

Throughout Songhay, adverbial distributives are constructed by reduplication of the number, sometimes preceded by reflexes of *nda* “with, and”, eg:

i ηka buu nda a-ffoo-foo

3PLS St die with Absol-one-one

“They died one at a time.” (Koyraboro Senni, Heath 1998:123)

i bun a-foo-foo

3PLS die AbsolSg-one-one

“They died one after the other (=one at a time).” (Koyra Chiini, Heath 1999:92)

Little data is available for Northern Songhay, but Tadaksahak too uses a reflex of *nda* plus reduplication:

wa mə-təʔ-təʔ ɔnda hiŋká hiŋká.

IMP:PL RECI-DUP-line.up COMV two two

Line (yourself.pl) up two by two!

Kwarandzyey has retained this construction:

4.164 *wə-hhur-tsi ndza inka-inka*

PL.IMP-enter-hither with two-REDUP

“come in two by two” (N5p56).

4.165 *i-hhur ndza inza-inza.*

3P-enter with three-REDUP

“They came in three by three.” (2008-02-05/10)

4.3.5 Predicative use

Numbers are rarely used predicatively, but when they are, they use the same predicative construction as nouns, eg:

4.166 *ləmsabiħ, ʒar inza ini*

Orion's Belt just three 3P

Orion's Belt is just three stars. (2007-12-21/33)

4.4 Conclusion

Numbers, especially higher numbers, are among the most widely borrowed items in languages under Arabic influence in North Africa. Throughout most of Northern and Eastern Berber, all numbers above 2 or 3 are Arabic borrowings (Souag 2007), as are a lot of the other quantifiers. Yet despite a near-complete adoption of Arabic vocabulary in this domain, the syntax of quantifier+noun constructions in both languages remains mostly independent of Arabic; quantifier specification, position, and presence or absence of a linker all correlate better to comparative data for each language's closest relatives than to Arabic practice, notwithstanding the syntactic differences between them, even if the situation for numerals in Northern Songhay is itself probably the result of earlier Berber influence. This strikingly demonstrates that lexical borrowing is no guarantee of syntactic borrowing – although, as the mass-count distinction in Arabic loans into Siwi suggests, it can be a contributing factor. Such situations correspond to Myers-Scotton's (1993) expectation that single-word borrowing of content morphemes through codeswitching will be placed in a frame with inherited word order; but, while such an approach happens to make the right predictions here, it does not explain why the relevant syntax should have been adopted in proto-Northern Songhay and Sudanese Hausa and Fulfulde.

The wholesale borrowing of counts for measures of time, together with those measures themselves, is similarly common. It is shared with most other Northern and Eastern Berber languages (Souag 2007); and similarly, in Sudanese Fulfulde “Loans pertaining to time, measurement and currency which have no Fulfulde equivalents are very frequently enumerated with Arabic numbers... In almost all of the utterances in which these items are mentioned in our data, they are enumerated by Arabic numbers.” (Abu-Manga 1986:192) The phenomenon may be comparable to Japanese and Korean's adoption of Chinese numbers usually combining with Chinese measure words, although in these languages all nouns require measure words for counting. In Myers-Scotton's terminology, these can be thought of as the grammaticalisation of Embedded Language

Islands, internally obeying the rules of Arabic rather than of the Matrix Language. The borrowing of phrases is not uncommon (compare, in Kwarandzyey, the use of Arabic phrases like *ən ša llaḥ* “if God wills”, *yafɫəm əllaḥ* “God knows”); but it is less common for it to lead to an entire productive paradigm.

A comparison with adpositions is instructive. The syntactic system is in both cases highly resilient, with only quite limited changes of word order from the original, while the lexemes themselves are much more easily borrowed – and whole phrases in the original language are also readily borrowed (as counters here, as adverbs there.)

5 Demonstratives and relative clauses

5.1 Introduction

Demonstratives are a closed class of words used by speakers to select among alternative referents based on their location or discourse relevance, to “orient the hearer in the surrounding situation” and “keep track of prior discourse participants” (Diessel 1999:2); key functions include pronominal, adnominal, and locative. Adverbs of time and place often consist of frozen noun-demonstrative combinations, and as such are potentially relevant here; in fact, in both languages they preserve aspects of older demonstrative systems which have ceased to be productive.

Relative clauses serve a similar discourse-tracking function to demonstratives, identifying a referent on the basis of predicates applicable to it. In Arabic, as in English, the two are handled quite differently from each other. But in both Siwi and Kwarandzyey, relative clauses are usually introduced by morphology closely related to the demonstrative system, and appear in what may be seen as the same syntactic position; it is therefore convenient to treat them together here. Only restrictive relatives will be discussed; no evidence for non-restrictive ones was observed in either language.

While demonstratives seem to be among the least readily borrowed subsystems of a language, cases of their borrowing are attested. A particularly clear one is Chamorro, where the Spanish *este* has completely replaced the original proximal demonstrative *ini* (Topping 1973:112). Gutob, a South Munda language, is believed to have borrowed at least part of its three-term demonstrative system (*e-*, *u-/tu-*, *ha-*) from Dravidian **i-*, **u-*, **a-* (Zide 1991). The Cantonese proximal demonstrative *ni^l*, atypical within Chinese, may derive from Tai, cp. Thai *nii* (Matthews 2006). Bechhaus-Gerst (1996) argues that Dongolawi-Kenuzi has borrowed its demonstrative pronouns from its relative Nobiin. Nonetheless, neither of the languages under examination includes any borrowed demonstratives.

The relative rarity of demonstrative borrowings should not be taken as meaning that

demonstrative systems are immune to external influence. Examples of syntactic calquing, in particular, are not hard to find. In French as spoken among the Ewe, less fluent speakers often omit the first element (*ce*) and leave only the postnominal portion *là*, a calque on the phonologically similar Ewe post-nominal demonstrative (Lafage 1985:96). In Tsat, a heavily Sinicized Chamic language of Hainan, more Chinese-influenced varieties have come to prepose the demonstrative as in Mandarin, while conservative varieties place it after the noun (Thurgood & Li 2002). In modern Rapanui, the language of Easter Island, demonstratives are increasingly placed prenominally as in Spanish rather than postnominally (Steven Roger Fischer 2007). Probable cases of semantic calquing are also found. The Amazonian (Maipurean) language Tariana appears to have restructured its demonstrative system on the model of its unrelated East Tucanoan neighbours, notably by developing a new third degree of distance referring to something far from the addressee (Aikhenvald 2002:109). Unusually large demonstrative systems have been described as an areal feature of the Pacific Northwest (Thomason 2001:124), and it has been suggested that the typologically unusual reduction of (prenominal) demonstratives system to a one-term system in French and German may also be a (minimal) areal feature (Da Milano 2007). As will be seen, Kwarandzyey and Siwi demonstrative systems both show signs of reorganisation under external influence.

Relative clauses are a comparatively inessential grammatical feature; they are acquired late by children (Ingram 1989:483), and are typically absent from early stages of second language acquisition (Wolfgang Klein & Perdue 1997). It is perhaps thus unsurprising that both relative markers and the structure of relative clauses are fairly susceptible to structural influence; to name a couple of examples, Pipil has borrowed Spanish *ke* “who, what” as a relative pronoun (Campbell 1985:128); El-Fogaha Berber has borrowed the Arabic relative marker *élli* (Paradisi 1963:104); and Azerbaijani has borrowed both the relative clause marker *ki* and the structure of finite postnominal relative clauses from Persian (Schönig 1998:260). Although the relative markers used in Kwarandzyey and Siwi are mostly inherited, the syntax of relative clauses in both languages displays convincing signs of reorganisation under external influence.

5.2 Siwi

5.2.1 Categories and forms

Siwi demonstratives are divided into three distances: proximal (near the speaker), medial (near the hearer), and distal (near neither.) Proximal forms show suffixed agreement in number and gender with the addressee, a typologically unusual phenomenon of which I have been able to find attestations for demonstratives only in Classical Arabic and Razihi Arabic (examples and discussion below.) In addition, Siwi pronominal, adnominal, and presentative demonstratives agree in number and gender with their referent.

Table 57.

	Proximal	Medial (addressing man)	Medial (addressing woman)	Medial (addressing group)	Distal
Pronominal ("this"):					
- M. sg. referent	<i>wa(ya)</i>	<i>wok</i>	<i>wom</i>	<i>werwən</i>	<i>wih</i>
- F. sg. referent	<i>ta(ya)</i>	<i>tok</i>	<i>tom</i>	<i>terwən</i>	<i>tih</i>
- Pl. referent	<i>wi(yya)</i>	<i>wiyyok</i>	<i>wiyyom</i>	<i>wiyyerwən</i>	<i>widin</i>
Adnominal: ("this pen")					
- M. sg. referent	<i>dawa(ya)</i>	<i>dawok</i>	<i>dawom</i>	<i>dawerwən</i>	<i>dawih</i>
- F. sg. referent	<i>tata(ya)</i>	<i>tatok</i>	<i>tatom</i>	<i>taterwən</i>	<i>tatih</i>
- Pl. referent	<i>dawi(yya)</i>	<i>dawiyyok</i>	<i>dawiyyom</i>	<i>dawiyyerwən</i>	<i>dawidin</i>
Presentative ("here is"):					
- M. sg. referent	<i>ɣwa(ya)</i>	<i>ɣwok</i>	<i>ɣwom</i>	<i>ɣwerwən</i>	<i>ɣwih</i>
- F. sg. referent	<i>xta(ya)</i>	<i>xtok</i>	<i>xtom</i>	<i>xterwən</i>	<i>xtih</i>
- Pl. referent	<i>ɣwi(yya)</i>	<i>ɣwiyyok</i>	<i>ɣwiyyom</i>	<i>ɣwiyyerwən</i>	<i>ɣwidin</i>
Locative ("here")	<i>gda(ya)</i>	<i>gdok</i>	<i>gdom</i>	<i>gderwən</i>	-

Approximate locative (“around here”)	<i>ssa</i>	<i>ssok</i>	<i>ssom</i>	<i>sserwən</i>	<i>ssih</i>
Manner adverb (“thus”)	<i>amsa</i>	<i>amsok</i>	<i>amsom</i>	<i>amserwən</i>	<i>amsih</i>

Where both are available, the *s*- series is used for more approximate location and the *gd*- series is default, like English “thereabouts” vs. “there”; there is no distal in the *gd*- series, perhaps because the distal is negatively defined as something near neither me nor you, and hence potentially covers an indefinitely large area. The difference is confirmed by native speaker intuitions; asked about the difference between *ssok* and *gdok*, one speaker defined the former as “مطلقة، يعني رمز للمجهول شوية” (“unrestricted, ie a sign of the unknown somewhat” - 2009/10/13.)

Besides these categories, the form *wihin*, f. *tihin* (a plural could not be elicited), is used as a filler word substituting for a noun not recalled, like English “whatsit” or “whatchamacallit” (no verbal equivalent was noted.) Etymologically, this is a distal demonstrative (see below for comparisons.) The use of a cognate distal demonstrative as a filler word is likewise attested in Zuara (Mitchell 2009:180) and in Ait Seghrouchen Berber, where Bentolila (1981:56) says of the masculine singular distal demonstrative *winn* that “on l'emploie quand on a oublié le nom qui désigne la chose à laquelle on veut faire allusion” (one uses it when one has forgotten the noun designating the thing to which one wishes to refer); as will be seen below, this has been calqued into Kwarandzyey.

Relative clauses, pronominal or adnominal, are introduced by a word agreeing in number and gender with the head noun (or referent): *wən* m./pl., *tən* f. Comparison to the demonstratives suggests that the plural form was originally distinct, and Laoust (1931:119) reports a distinct plural *wīyən*; this, however, is no longer used. Both my consultants and those of Leguil (1986a:108) give only *wən* for the plural.

5.2.1.1 Origins

All the morphemes above seem to be of Berber origin. The basic proximal and distal pronominal and locative forms have equivalents throughout Berber (data from Paradisi (1960), Nait-Zerrad (2001), Bentolila (1981)):

Table 58.

	Siwi	Awjila	Kabyle	Ait Seghrouchen
this m.	<i>wa(ya)</i>	<i>wá/wę/wāya</i>	<i>wa(gi)</i>	<i>wu</i>
this f.	<i>ta(ya)</i>	<i>tá/te/tāya</i>	<i>ta(gi)</i>	<i>tu</i>
this m. pl.	<i>wi(yya)</i>	<i>wīya</i>	<i>wi(gi)</i>	<i>yinu</i>
that m.	<i>wih</i>	<i>wīwan</i>	<i>wihin</i>	<i>winn</i>
that f.	<i>tih</i>	<i>tīwan</i>	<i>tihin</i>	<i>tinn</i>
that m. pl.	<i>widin</i>	<i>widānīn</i>	<i>wihid</i>	<i>yininn</i>
here	<i>gda</i>	<i>dīla</i>	<i>da(gi)</i>	<i>da</i>

Note that this table omits the feminine plural forms, since Siwi – unlike other Berber languages – has no gender distinction in the plural; this is a special case of a general loss of gender agreement in the plural, also seen consistently in the personal pronouns and verbal agreement markers and less consistently in the adjectives. The relative pronouns with *-n* are less widespread, but have exact equivalent in eg Eastern Rif *wən* m.sg., *tən* f. sg., *(y)in* m. pl. (Kossmann 2000), Zayan Tamazight *un, ten, wis* (Loubignac 1924). For the *g* and *ss* in the locative forms, cp. the Siwi prepositions *g* “in” and *s* “with, by”. The *γ* appearing in the presentational forms has a possible counterpart in Tashelhiyt pronominal demonstrative forms *γwa, γwi, xta, xti* (Aspinion 1953), and is perhaps to be linked historically to a preposition such as *γur* “at”; in any case it cannot be linked to Arabic influence. The manner adverbs are plausibly derived by Vycichl (2005:243) from *am* “like” + *s* “with” + the usual demonstratives. But whereas the forms are Berber, the organisation is unexpected for Berber.

5.2.1.1.1 Distances and anaphoric forms

The typical Berber system, as in Ait Seghrouchen Tamazight (Bentolila 1981), Kabyle (Nait-Zerrad 2001), or Eastern Rif (Kossmann 2000), features a different three-way

distinction – proximal, distal, and anaphoric (referring back to an entity previously mentioned in, or clearly relevant to, the discourse.) A medial distance is not typical for Berber, but not entirely unprecedented; for Tamasheq, Heath (Heath 2005a:239) describes a “near-distant” demonstrative *wədi*, and Chenoua (Laoust 1912) is described as having a “medium distance” demonstrative <*ouaiek*> *wayək* contrasting with what appear to be proximal <*oua*> *wa* and distal <*ouin*> *win*. A possible example closer to Siwa is Awjila (Paradisi 1960) *wək*, simply glossed, along with *wá* as “questo” (“this”.) The lack of an anaphoric demonstrative appears rather more unusual. Most Berber languages examined are described clearly as having anaphoric demonstratives; while some older sources make no mention of these, the only Berber language for which I am aware of an explicit statement that it lacks an anaphoric demonstrative is Figuig (Kossmann 1997:235). For nearby Awjila, an anaphoric demonstrative has not been explicitly described, but Paradisi's form *-idīn* “quello (non molto lontana)” (“that (not very far)”) is likely to be one, given its etymological correspondences. The origin of the extra adnominal morpheme is also problematic, but this will be discussed below. Can these differences be linked to Arabic influence?

The lack of a specifically anaphoric demonstrative, of course, parallels Arabic precisely, and the only other Berber language found to lack it, Figuig, is also heavily influenced by Arabic. The conclusion that this loss is probably contact-induced seems clear. The presence of a medial distance is not typical for Arabic dialects, and indeed Cairene Arabic has only one distance (Gary & Gamal-Eldin 1982:85); however, the medial distance in Siwi shares a strikingly typologically unusual feature with archaic Arabic, suggesting that Arabic influence at some time depth may be at work here too.

5.2.1.1.2 Addressee agreement

Addressee agreement is not attested anywhere else in Berber, and appears almost unknown elsewhere; Siwi addressee agreement thus deserves particular attention here (partly based on Souag 2009.) Here are a few minimal pairs, mostly from a retelling of the story of Joseph:

Standalone medial, referent = m. sg., different addressees:

5.1 *y-umm^w-as:* *a* *wəldi...* *wo-k* *xer* *a-zuwwar*
 3M-say-3SgDat: oh my son... **that.M-2:M** good M-great
 He told him: O my son... **that** is a great good.

5.2 *y-umṡ^w-as* *i* *talt-ənnəs:* *wo-m* *ge-yənfu-yanax*
 3M-say-3SgDat: to woman-3SgGen: **that.M-2:F** IRR-benefit.3M-1PIDat
 He told his wife: **that one** will benefit us.

5.3 *yumṡ^w-ásən:* *w-érwən* *agg^wid n* *rəbb^wi*
 3M-say-3PIDat: **that.M-2:F** man GEN God
 He told them: **that** is a man of God.

Modifying medial, referent=f.sg., different addressees:

5.4 *tasútət* *tatók* *təlla* *múddət-laʕmər*
 palm tree **MOD-DEM.F-2:M** 3F.be(locative) lifetime
That palm tree has been around for ages. (addressing male researcher)

5.5 *ántf-ax* *twərdət* *ta-t-óm* *msabb-kí*
 pick-1S flower **MOD-DEM.F-2:F** because-2F
 I picked **that** flower for your (f.) sake.

5.6 *mm^wi-γ-asín-a* *i* *itadəm-ənnəw:* *g-úsəd* *g əlʕarbiyya ta-t-érwən*
 say-1S-3PDat-PF to people-1SDat IRR.3M-come in car **MOD-DEM.F-2:PI**
 I told my family: they will come in **that** car.

The earliest clear record of addressee agreement of which I am aware occurs – unrecognised – in a story recorded by Laoust (1931:147). Towards its end, a jackal tells a hyena (feminine in Siwi) “that’s the state of the world” (<*wom əlhal n-əddənīt*>). Laoust analyses it as *wa am* “this is like”, but there is no Siwi-internal motivation for *a+a > o*, and understanding it as a demonstrative with addressee agreement is more

plausible. An older example lacking context is given in Walker's (1921:44) slightly mistranslated version of the adverbial demonstrative paradigm: <amsûk> “like that (m)”, <amsòm> “like that (f)”. The medial forms with *-k* themselves are attested even earlier: Basset (1890:16) gives <ouok> *وك* and pl. <ouiok> *ويك*. This feature is clearly not a recent development.

Etymologically, these forms are to be derived from internal sources. The proximal demonstrative pronoun forms, *wa* (m.sg.) / *ta* (f. sg.) / *wi* (m. pl.), are pan-Berber, as seen above. The medial forms can be derived from these, if we analyse *e* as *a+i* and *o* as *a+u*, by adding the suffixes *-u-k*, *-u-m*, *-ir-wən*. Most Berber languages do not have any of these three suffixes in their demonstrative paradigms, as noted by Basset (1952:52). For nearby Awjila, the pronominal forms *wék* (m.), *ték* (f.) and adnominal clitic *-ek* listed under “questo” as alternatives to *wá/tá/wîya/tîya* (Paradisi 1960) suggest a shared development rather than a shared archaism, although there is no evidence of addressee agreement in the paltry materials available; the other exception mentioned above, Chenoua, only has *-k*, with no evidence for a preceding vowel nor for agreement, and is unusual enough within Berber that it could itself be a calque off Arabic (Algerian *hadā* “this” vs. *hadāk* “that”), and hence does not constitute a strong argument for regarding *-k* as a common inheritance. The regular Siwi (and pan-Berber) 2nd person suffixes for prepositions are m. sg. *-k*, f. sg. *-m*, pl. *-wən*; the extra material, and especially the otherwise unexpected *r* in the plural addressee forms, suggest a contraction of the preposition *γur-* “at”. The Siwi preposition *af* “on”, from pan-Berber *γaf*, already suggests that *γ* has a certain tendency to be deleted in high-frequency items. Thus the original forms would have been something like “this at you”. A parallel development generated both Classical Arabic *ḏālika* “this” < *ḏā*, originally “this” + *li-* “to” + *-ka* “you (m. sg.)”, and Italian (Tuscan) *codesto* < Vulgar Latin *eccu' tibi istum* “behold to-you that” (Baragiola 2009:91).

In almost all contemporary Arabic dialects, addressee agreement is absent or restricted to presentatives, eg Egyptian Arabic *'adī-k* (m. addr.), *'adī-ki* (f. addr.) “here you have...” (Woidich 2006:49). However, in Qur'anic Arabic certain demonstratives, in particular *ḏālika* (m. sg. referent) / *tilka* (f. sg. referent) “that”, may agree in gender and number

with the addressee, yielding *ḍālikumā/tilkumā* (to 2 people), *ḍālikum/tilkum* (to more than 2 people including a man), and *ḍālikunna/tilkunna* (to more than 2 women). Eg:

- Sūrat Yūsuf, v. 32: *fa-ḍālikunna lladī lumtunnanī fih* “That (with 2f.pl. ending) is he about whom you (f.pl.) blamed me” - said by Pharaoh's wife addressing her female friends
- Sūrat Yūsuf, v. 37: *ḍālikumā mimmā ḥallamanī rabbī* “That (with 2du. ending) is from what my Lord has taught me” - said by Yūsuf addressing his two cellmates
- Sūrat al-Aḥrāf, v. 22: *'a-lam 'anhakumā ḥan tilkumā ššajarati* “Did I not warn you two against that (with 2du. ending) tree?” - said by God addressing Adam and Eve. (Note that in this case the demonstrative is attributive, and hence cannot be presentative.)

This phenomenon has continued to the present in the Arabic dialect of Jabal Rāziḥ in Yemen, according to Watson et al. (2006), where, for example, “that m. s.' is realised as *dāk* when the addressee is male, *dāc* when the addressee is female, *dākum* when the addressees are male, and *dākun* when the addressees are female.” However, in the vast majority of Arabic dialects, and in Modern Standard Arabic, it is no longer productive.

Both the phenomenon of addressee agreement on demonstratives and the grammaticalisation path by which both languages originally gained it – namely, demonstrative + spatial preposition + 2nd person affix > medial demonstrative agreeing in person – appear rare. The most extensive survey currently available of attested grammaticalisation paths is Heine & Kuteva (2002); this work, listing 400 grammaticalisation processes using data from roughly 500 languages, does not include this particular path. The chances of independent parallel development are thus low, justifying an attribution of this phenomenon to Arabic influence.

5.2.2 Adnominal demonstrative syntax

Adnominal demonstratives are strictly positioned after the noun and after any adjectives or possessive suffixes modifying the noun, and normally also follow possessors even

when modifying the head:

- 5.7 *uš-i akbər-ənnəw a-məllal da-w-ók*
 give-1SgDat robe-1SgGen M-white MOD-DemM-2:M
 Give me that white robe of mine. (2009-07-01)

- 5.8 *táza ta-zəttaf-t tá-t-ok tə-ččúr-a g əttút n a-məllal*
 bowl F-black-F MOD-DemF-2:M 3F-fill-PF in mulberry GEN M-white
 That black bowl is filled with white mulberries. (2008-05-07/329)

- 5.9 *ga-ššy-əm akbər-nnəw da-w-érwən*
 FUT-take-2P robe-1SgGen MOD-DemM-2:Pl
 You will take this robe of mine. (2008-08-03/Yusuf5)

- 5.10 *tihəttət n əttut ta-zəttaf-t tá-t-ok*
 berry[F] GEN mulberry[M] F-black-F MOD-DemF-2:M
 that black mulberry berry (2008-05-07/329)

They may either follow or precede relative clauses:

- 5.11 *lá təcč tibətwén i-səlq-in-a da-wiyy-ók*
 NEG eat.INT eggs 3-boil-3Pl-PF MOD-DemP-2:M
 Don't eat those boiled eggs (or “eggs which have been boiled”). (2009-06-27)

- 5.12 *lá səll-ás i wən yə-xrif-a da-w-ók*
 NEG listen.INT-2SgDat to RelM 3M-crazy-PF MOD-DemM-2:M
 Don't listen to that guy who is crazy. (2009-06-21)

vs.

- 5.13 *úš-i ləqmaš a-məllal da-w-ók wən yə-tbáq-a*
 give-1SgDat cloth M-white MOD-DemM-2:M RelM M-fold-PF
 Give me that white cloth which is folded. (2009-06-27)

- 5.14 *táxyamt ta-tih tán sáddu amázdæg*
 tent MOD-DemF.Dist RELF next to mosque
 That tent which is next to the mosque (2009-07-01)

As seen above, they consist of the pronominal demonstrative forms preceded by an extra morpheme *da* (f. *ta*). This phenomenon is no doubt early; it is attested at least as early as Bricchetti-Robetti's (1889) <etadem douija> *اتادم دوي* for **itadem dawiyya* “these men” (cited in Basset (1890:39).) Its post-adjectival position is confirmed by Walker (Walker 1921:43) <dábâsh áthhèl dówûk> for **ddbaš aθqil dawok* “this heavy baggage”. This situation is quite anomalous in Berber, and requires explanation.

In the original Berber pattern, exemplified by the large majority of varieties, adnominal demonstratives are clitics (although sometimes transcribed as separate words), usually invariant for number and gender, directly attached to the noun to which they refer (after any pronominal possessor suffixes), with no equivalent of Siwi *da-/ta-*.

- Ouargla: *argaz ou, taiziout ou*
 man this, girl this
 this man, this girl (Biarnay 1908:34)

- Chaoui: *azəmmur-din*
 olive-DEM.DIST
 “ces olives-là”
 those olives (Penchoen 1973:14)

- Nafusi: *taddârt ūh tīnném*
 house DEM FSgRel-2SgGen
 “questa casa è tua”
 This house is yours. (Beguinot 1931:141)

- Ghadames: *ouddjid ou*

man DEM
 “cette homme”
 this man (Calassanti-Motyliniski 1904:24)

Awjila: *ameḍen-áya, amēḍen-íwan; temígni-y-íwan*
 man-DEM.PROX man-DEM.DIST woman-EP-DEM.DIST
 (questo uomo, quell'uomo; quella donna)
 this man, that man; that woman (Paradisi 1960)

Tamasheq: *ilámawǎn-nǎm dí-dǎy*
 skins-2FSgPoss DEM.NearDist-ANA
 those hides of yours (Heath 2005a:242)

In such cases, the demonstrative seems to be attached directly to the head noun, preceding the adjective (although few if any grammars give relevant examples):

axxam-agi a-mállal
 house-this MSg-white
 this white house (Kabyle, elicited from A. Sennaoui)

Sometimes the suffixed demonstrative retains some agreement morphology. Thus in certain Kabyle varieties *-agi* “this” has a plural form *-igi* (Naït-Zerrad 2001:52), and similarly in Sened:

Sened: *<achenti ouai... tamat't'out tai... irgäzen ia...>*
**ašanti-way taməṭṭut-tay i-rgaz-ən-ya*
 child-DEM.M woman-DEM.F Pl-man-Pl-DEM.Pl
 this child, this woman, these men. (Provotelle 1911:44)

The closest parallel to Siwi so far found is in the dialect of El-Fogaha, a central Libyan oasis (Paradisi 1963:121):

Table 59.

(El-Fogaha)	Pronominal	Adnominal
Proximal sg.	<i>wa</i> m. / <i>ta</i> f.	- <i>ədda</i> (eg <i>tamāṭṭūt ădda</i> “this woman”, <i>amār-ăddá</i> “this man”)
Proximal pl.	<i>wi</i> m. / <i>ti</i> f.	-(<i>əd</i>) <i>dí</i> (eg <i>imédden-dí</i> “these men”)
Distal sg.=pl.	<i>wənhak</i> m. / <i>tənhak</i> f.	- <i>əddən</i> (eg <i>tasdāna-ddén</i> “these women”, <i>amār-ăddén</i> “these men”)

However, internal evidence confirms that this system is innovative both in Siwi and in El-Fogaha. Traces of direct suffixation of adnominal demonstratives to the noun, without *da-/ta-* intervening, can still be seen in a number of Siwi and El-Fogaha adverbs:

Proximal *-*a* (cp. Kabyle -*a/agi*, Chaoui -*a/aya*, Zayan -*a/aḍ*):

asfa “today” (Kab./Mzab *ass*, Awjila *išf* “day”); El-Fogaha *assá*

iṭa “tonight” (Kab./Mz. *iḍ* “night”)

asəggasa “this year” (Kab./Mz. *asəggwas* “year”); El-Fogaha *šaggáša*

amra “now” (Tamajeq *ămer* “moment, time, season, period” (Alojaly 1980)); El-Fogaha *amîra*

Anaphoric *-*din* (cp. Chaoui, Ait Seghrouchen -*din*; Awjila -*idīn* “quello (non molto lontana)”))

nhaḍdin “then, at that time” (Siwi *nnhar* “day” < Ar.)

This shows that Siwi and El-Fogaha too originally suffixed adnominal demonstratives to the noun like other Berber languages, and hence that the linker *da-/ta-* is a Siwi innovation, shared only with El-Fogaha. Where did it come from?

If the Siwi case were completely isolated within Berber, one would be strongly tempted to derive this *da* from the Egyptian Arabic (not Bedouin Arabic) distance-neutral

masculine singular demonstrative *da* “this”. The Egyptian Arabic demonstrative likewise follows the head noun and any adjectives, though it precedes relative clauses (Gary & Gamal-Eldin 1982:33), eg (*ibid*):

kul *ʔil-sabaʕ* *banāt ʔil-ḥilw-īn* ***dōl*** *ʔilli* *ʔitxarrag-u...*
 all the-seven girls the-pretty-PL **those** who graduated-3PL
 All those seven pretty girls who graduated...

The form *da* (~ *dah* ~ *dih*) is also found, in the same syntactic position, in the Arabic of the nearest oasis, Bahariya (Drop & Woidich 2007:48):

aṛ-ṛāžil *il-mažnūn* ***dah***
 the-man the-crazy **this.M**
 this crazy man (“der verrückte Kerl”) (*ibid*)

Since most Egyptian dialects distinguish no more than two distances and for many, including Cairene (Gary & Gamal-Eldin 1982:85) *da* has become distance-neutral, the addition of demonstratives could be motivated by a need to make the same distinctions in the adnominal forms as in the pronominal ones. However, deriving it from Egyptian Arabic would force us to suppose that the agreement paradigm (Eg. Ar. m. *da*, f. *di*, pl. *dōl*) was simplified to the masculine form alone, even though the agreement systems are perfectly congruent and even though speakers fluent enough to borrow such a morpheme would certainly be able to decline it correctly. In any case, the existence of a similar morpheme in El-Fogaha is problematic for this account; the Arabic of its region, Fezzan, normally uses NP-initial demonstratives *had-* etc. (Caubet 2004:89), and there is no obvious reason to assume that El-Fogaha was at some point in the past influenced by Egyptian-like Arabic dialects.

This makes it preferable to find a Berber-internal etymology, and one is available: **da* “here” (cp. Siwi *gda*, analysable as **g-da* “in here”, and similar forms across Berber, eg Eastern Rif *da*, Ait Seghrouchen *da*, Kabyle *ḍagi*.) The development of deictic locatives like “here” into demonstratives is well-documented cross-linguistically (Heine

& Kuteva 2002:172), and even within Berber we may compare the proximal demonstrative variant *-ada* (pl. *ida*) in the Western Rif (Lafkioui 2007:206), presumably from *-a/i + da*. As quasi-relative modifiers it is expected that they would be placed towards the end of the noun phrase. Neither this hypothesis nor borrowing can explain the feminine allomorph *ta-* directly; this must be assumed to have arisen through long-distance voicing assimilation to the *t-* of the feminine demonstratives. The historic demonstrative pronouns suffixed to *da-/ta-* must be explained as reinforcement (compare dialectal English *this here...*) This reinforcement could be motivated by the fact that *gda* no longer has any direct distal equivalent in Siwi (*ssih* comes from a different source), and hence (assuming it had already lost this) not all distance distinctions could be marked through the locative demonstratives alone.

If this account of the development of Siwi adnominal demonstratives is correct, then their syntactic and phonetic resemblance to Egyptian demonstratives must be largely coincidental. At most, the resemblance may have contributed to a trend of using postposed *da* that must already have been present, and perhaps to the preservation of this system once it had been established.

5.2.3 Syntax of relative clauses

Externally, Siwi relative clauses are positioned after the head noun and any adjectives, as in both other Berber languages and Arabic. Like Siwi adjectives, they are sometimes preceded by an *n*, resembling the genitive particle but of obscure function. Demonstratives, as discussed above, may precede or follow them.

Relative clauses with *wən/tən* may also form noun phrases without a head noun, again as in Berber and like Arabic relative clauses with *illi*, eg:

- 5.15 *wən* *ga-n-zərʕ-as-t* *la-y-kkr-as*
 REL.M **FUT-1P-plant-3MDat-3MObj** **NEG-3M-rise-3MDat**
 What we would plant for it would not grow. (2008-04-09/127)

Where a head noun is present, a distinction must be drawn between definite and indefinite forms: definites feature the marker *wən/tən*, indefinites drop it. In this section, all remarks will refer to forms with *wən/tən* until otherwise stated.

For subjects, the structure is *wən/tən* plus predicate (with appropriate verbal agreement when a verb is present):

S:

5.16 *tláčča tən ama t-tásəd*
 girl **REL.F**now **3F**-arrive.INT
 the girl who is currently arriving (2009-06-21/b)

5.17 *əlḥádd wən g-úsəd*
 Sunday **REL.M** IRR.3M-come
 next Sunday (the Sunday which is coming) (2009-06-17)

5.18 *táxyamt ta-tih tən sáddu amázdəg*
 tent MOD-DemF.Dist **REL.F**next to mosque
 That tent which is next to the mosque (2009-07-01)

For other grammatical functions, a resumptive pronominal marker (agreement for indirect objects, clitics for direct objects, objects of prepositions, and possessors), agreeing with the referent in gender/number, is also required. Thus:

(5.19-23)

DO: *x-t-érwən tfúnast tazúwwart tən rəbba-x-tít-a*
 PRES-F-PIAdd cow big **REL.F**raise-1Sg-3FObj-PF
 There is the big cow that I raised. (2009-06-22/a)

IO: *tálti tən dázz-γ-as jjəwab*
 woman**REL.F**send-1S-3SDat letter
 the woman to whom I sent the letter (2009-10-13)

OBL: *amjír n wən i-šállaf-ən sǎgd-əs lǎšlǎf*
 scythe GEN **M.REL** 3-cut fodder-3P **with-3S** fodder
 the scythe with which they cut fodder (2002-03-18/Tamza)

OBL: *ágg^{wid} wən ħħi-x díd-əs i məṭruħ*
 man **REL.M** go-1S **with-3S** to Matrouh
 the man with whom I went to Matrouh (2009-10-13)

GEN: *wən ššar-ǎnnəs a-ṭwíl*
REL.M hair-3S Gen M-long
 one whose hair is long (2008-05-08)

This differs from more conservative Berber languages in two important respects. In Siwi, the verb takes the same form in subject relativisation as in main clauses; in most Berber languages, it takes a special form, the “participle”, with an *-n* suffix and with agreement limited or absent entirely. In Tamasheq, the relative participle is formed by adding a suffix m. sg. *-ǎn*, f. sg. *-ǎt*, pl. *-nen* (Heath 2005a:484) to the corresponding third person verb form minus any suffixes (if a preverbal particle is present, similar suffixes instead show up on the particle); in Figuig, it is invariant for gender/number, and takes the form *i-...-ən* (*n-* in the aorist or negative) (Kossmann 1997:160). Even nearby Awjila has retained a participle ending in *-n* added to an invariant verb stem, as illustrated by examples like the following:

amédən wa târev-en nettín šayyân
 man **REL.M** write.INT-PTC he ill
 “l’uomo che sta scrivendo è malato”
 the man who is writing is ill (Paradisi 1960:162)

temígni ta uš-ǎn-da šǎbǎṭ d-wértma
 woman **REL.F** come-PTC-hither yesterday COP-sister
 “la donna che è venuta ieri è mia sorella”

the woman who came yesterday is my sister (*ibid*)

However, Siwa is not entirely unique in losing the participle: similar cases are found in other heavily Arabic-influenced eastern Berber languages, notably Nafusa (the data for El-Fogaha are inadequate):

bnâdem *ūh* *elli* *ye-ġleb* *eddínyet* *úkkul s* *elĥilet*
 person this **REL** **3M-defeat** world all with trick

“questo uomo che ha vinto tutto il mondo con l'astuzia”

this person who has defeated the whole world with cleverness. (Beguinet 1931:152)

This may thus be a common innovation in some subset of eastern Berber, but is probably due to Arabic influence in either event. The system found in most of Berber differs profoundly from Arabic or Romance, and features a morpheme (-*n*) with no synchronically transparent etymology; it cannot plausibly be attributed to contact within the past three millennia. The Siwi system, on the other hand – as Leguil (1986a:110) noted – exactly parallels that used throughout Arabic, where, rather than taking a special suffix or limited agreement, the verb takes precisely the same form as it would have in a main clause with the same subject, eg:

šuf-t *il-wilaad* *illi* *gāb-u* *l-gawabāt*
 see-1SgPf the-boys **who** brought-**3SgPf** the-letters

I saw the boys who brought the letters (Egyptian Arabic (Abdel-Massih 2009:234))

In Siwi, as seen above, resumptive pronouns are used for non-subject relativisation; in most Berber languages, instead – eg Tamasheq, Figuig, Kabyle, Ouargla, Middle Atlas Tamazight, Eastern Rif, Chaouia, Tashelhiyt – gaps are required, and any stranded adpositions are moved to the front of the relative phrase (along with various clitics.) Thus in Tamasheq:

æ-háləs *w-a* *wàr* *i-nhey*
 Sg-man Ma-DemSg Neg 3MaSgS-see.PerfN
 the man whom he did not see (Heath 2005a:630)

æ-háləs *w-à-dàr-d* *æddew-æγ*
 Sg-man Ma-DemSg-**with**-Centrip go with.PerfP-1Sg
 the man with whom I came here (Heath 2005a:633)

This contrasts with Arabic. In Classical Arabic, the resumptive pronoun is optional for direct objects (though obligatory for the objects of prepositions); however, in most dialects it has become obligatory even for direct objects, including Cyrenaican Arabic (Owens 1984:99) and Cairene Arabic (Gary & Gamal-Eldin 1982:17).

Most other Eastern Berber languages share the Siwi system for prepositions, as discussed in Adpositions (6.6.1); but for those, there is direct evidence that this represents Arabic influence at a time that must be later than the separation of Nafusi from Siwi. For direct objects, on the other hand, even other eastern Berber languages seem to be more conservative. Awjila retains the gap:

améden *wa* *ššín-h-a* *šábâṭ* *gâr-es lûda*
 man **M.REL** know-1S-PF yesterday at-3S nothing
 “l'uomo che ho conosciuto ieri è povero”
 the man whom I got to know yesterday has nothing. (Paradisi 1960:162)

So does Nafusi:

Y-ûs-ed *aterrâs* *îha* *élli* *i-ss-âli* *s* *elbîr*
 3S-come-hither man that **REL** 3S-CAUS-go up from well
 “Venne quel'uomo che egli aveva fatto salire dal pozzo”
 That man whom he had pulled out of the well came (Beguinet 1931:174)

In fact, this instance of Arabic influence, unusually among cases of grammatical influence in Siwi, can be positively dated to the mid-20th century. In Laoust (1931:119) no resumptive pronoun appears with direct objects:

< <i>agmar</i>	<i>wən</i>	<i>sǧiǧ</i>	<i>sənʕali</i> >
* <i>agmar</i>	<i>wən</i>	<i>sɣi-ɣ</i>	<i>s-an-ʕali</i>
horse	REL.M	buy-1S	from-people of-Ali
“le cheval que j'ai acheté à Ali”			
the horse which I bought from Ali			

Leguil (1986a:110), however, notes that by his time the resumptive pronoun was already obligatory in Siwi, and Laoust's examples had become unacceptable; as Leguil says, “Le calque arabe est manifeste.”

Other possible calques off Arabic may be found in the distribution of relative markers. In adnominal relative clauses, the marker *wən/tən* is sometimes absent. The primary context where this occurs is with indefinite heads (note the first example, where the relative clause is not affirmed and hence cannot be interpreted as an independent main clause):

5.24 *ħəttá mərɾa zri-x tfunást ɣur-əs arɕsa n əččáwən*
 even time see-1S cow at-3S four GEN horns
 I have never seen a cow which had four horns. (2009-10-13)

5.25 *y-uḡḡw-ásən náknūm ɣur-wən ájjən y-ukír-a*
 3M-say-3P Dat2P at-2P one.M 3M-steal-PF
 He told them: you have among you one who has stolen. (2008-08-03/Yusuf5)

5.26 *ṭayyib kan-nni if-áx-t g íjjən dilla ɣur:-wi:n?*
 alright if-COMP find-1S-3M Obj in one.M be at.M at-2P?
 OK, what if I find it with one that's among you people? (2008-08-03/Yusuf5)

5.27 *díyy akubb^{wí} y-úsəd s álqos*
 EXIST boy 3M-come with bicycle
 There's a boy who arrived by bicycle. (2009-06-21/b)

5.28 *diy y agg^{wid} i-sállam-ən fəll-as*
 EXIST man 3-greet.INT-PL on-3S
 There's a man they're saying hi to. (N2p46)

This phenomenon obviously parallels Arabic (classical and dialectal), where, in general, the relative marker is obligatorily present with definite heads and obligatorily absent with indefinite ones (unless pronominal), as in Cairene Arabic (Gary & Gamal-Eldin 1982:17). In Cyrenaican Arabic, the relative pronoun is optional in definite relative clauses, but again obligatorily absent from indefinite ones unless pronominal (Owens 1984:99).

However, while not often described for Berber, it also has Berber parallels, including some generally conservative varieties. In northern Moroccan Tamazight – though not in more southerly dialects such as that of Zemmour, nor Tashelhiyt – relative clauses with indefinite heads show no relative marker (normally a demonstrative in this dialect) and, in subject relativisation, use finite verb forms rather than the non-finite participle discussed above; Leguil (1992:78) notes the identity of this structure with that used in Moroccan Arabic. In Tamasheq (Heath 2005a:481), definite subject relatives “require a definite demonstrative” (*wa* etc.), while indefinite ones “are expressed by placing the participle immediately after a head NP”, again using a finite verb form rather than a participle (*ibid.*, 623). Determining whether this represents independent parallel development (sometimes under Arabic influence) or can be reconstructed for proto-Berber will require more detailed grammars of a wider range of varieties than is currently available.

Another context where marker-less relative clauses are attested looks particularly like Arabic influence, but is so far convincingly exemplified only once in my data:

- 5.29 *lá tǎčč tibəṭwén i-səlq-ín-a da-wiyy-ók*
 NEG eat.INT eggs 3-boil-P-PF MOD-DemP-2:M
 Don't eat those boiled eggs. (2009-06-27)

This is a translation equivalent of an Arabic adjective (*maslūq* “boiled”), and adjectives do not require relative markers in Arabic. However, such cases are more commonly rendered with the relative marker, eg:

- 5.30 *uš-anax tyázəṭ tən tə-šwá-ya af aləmfusi*
 give-1PDat chicken REL.F3F-roast-PF on left
 Give us the roast chicken on the left (“the chicken that has been roasted”) (26-10-2009, email)

The example without the relative marker thus appears to be an isolated case, resulting perhaps from “boiled eggs” being used as a fixed phrase.

5.3 Kwarandzyey

5.3.1 Categories and forms

The demonstratives of Kwarandzyey show a three-way distinction between proximal (near the speaker and hearer), anaphoric (conspicuous in memory or salient in the discourse context, eg through having been previously referred to), and distal (distant from the speaker and hearer). The proximal-distal distinction is essentially spatial; it may be illustrated by contrasts like:

- 5.31 *tsank^w=ayu?* *aha* *uyuna?*
 who?=ID.DEM.PROX as for DEM.DIST
 (about person next to speaker) (about person several metres away)
 Who's this (person)? What about that (person)? (N1p187)

The usage of the anaphoric forms to refer back to something not present but recently mentioned in the dialogue may be exemplified by the following dialogues:

5.32

A: *məndz=tsa nə-kkūr-kūz?*
 where=LOC 2S-lunch?
 Where did you have lunch?

B: *bərɾuk n həššum=i n gə.*
 Barrouk GEN Hachoum=PL GEN house.
 Barrouk son of Hachoum's house.

A: *tsuɣ i-b-dza dzuydzi?*
 what 3P-IMPF-do there.ANA?
 What do they do **there**? (2007-12-22/13)

or:

5.33

Me (Ar.): *lukan waḥəd li smiyytu ki smiyytək?*
 And if it were someone whose name was like yours?

Consultant: *an ma mḥar ʕan ma*
 3SGen name like 1SGen name.
iyyəh, aɣəy muḥəmməd, uyudzi wara ana muḥəmməd.
 yes, 1S Mohamed, DEM.ANA even 3S Mohamed.
 His name is like my name. Yeah, I am Mohamed, **this** [hypothetical,
 previously mentioned] guy is also Mohamed. (2008-01-19/08)

Table 60.

	Proximal	Anaphoric	Distal
Pronominal	<i>uyu</i>	<i>uyudzi</i>	<i>uyuna</i>
Adnominal	<i>-yu</i>	<i>-dzi</i>	<i>-yuna</i>
Identificational	<i>ayu</i>	<i>adzi</i> <i>ayudzi</i>	<i>ayuna</i>
Locative	<i>adayu, (tsəkka)</i>	<i>dzūydzi, aḍaḍzi</i>	<i>dzina</i>
Approximate locative	<i>gayu</i>	<i>gadzi</i>	<i>gayuna</i>
Adverb of manner	<i>məsyu</i>	<i>məsdzi</i>	(unattested)

The NP-plural clitic *yu* is attached regularly to the pronominal and adnominal forms with plural reference: *uy=yu*, *uyudz=yu*, *uyuna=yu*; *=γ=yu*, *=dz=yu*, *γuna=yu*. The adnominal demonstrative clitics are in general mutually exclusive; **-yudzi*, *-yunadzi*, **-dziyuna* etc. are all impossible (except for combinations of *γuna* “whatsit” with demonstrative endings, for which see below.) This contrasts with southern Songhay, where the distance-unmarked demonstrative *woo* can typically be followed by the anaphoric marker, eg Koyra Chiini *har woo di yo* “these (those) men” (Heath 1999a:97), Koyraboro Senni *woy-ey w-ey din* “those (same) women” (Heath 1999b:131); the incompatibility of the two suggests reorganisation under Berber influence (see below.)

While the distal forms are exclusively demonstrative, the proximal and anaphoric pro/adnominal forms also do duty as relative pronouns (see Relative clauses), and the proximal one serves as a semantically empty nominal head for adjectives (see Adjectives.)

The three locative series are organised morphologically above. *adayu* is the normal equivalent of “here”, and by a large margin the commonest demonstrative locative in my corpus; *tsəkka* (N5p211) is far rarer, but seems to mean roughly the same. The distinction is not idiolectal (the same speaker would use both.) *dzūydzi* (example above) is commoner than *aḍaḍzi*; the latter is perhaps best seen as a not quite fixed expression “in that place” based on *aḍa* “place”, but is parallel to the unmarked proximal locative *adayu*. The approximative locatives, formed by adding the normal demonstrative

endings to the base *ga-* (N6p63), are used either on their own as locative pronouns or in a genitive construction as secondary postpositions, forming the idea of “around (in the general area of) X”. Since directions are inherently sets of locations rather than single locations, they often render directions; this corresponds to the ambiguity of Arabic *jiht*, which means both “direction of” and “around (in the general area of)”. This might be suspected to be an artefact of translation, but unelicited examples confirm that this series can express stationary location as well as motion. They are also common as relative heads (see below.) *gayuna* as a secondary postposition is often best translated as “beyond”. I have no natural examples of *gadzi*, but have elicited it.

- 5.34 *bəššar n gay=si* / *gayuna=si*
 Bechar GEN **hereabouts**=DAT **yonder**=DAT
 around Bechar (N8p114)
- 5.35 *an gayuna=si, amrər bə a=ka*
 3S Gen **yonder**=DAT erg exist 3S=LOC
 Beyond it, there's an erg (large expanse of sand dunes) in it. (N5p26)
- 5.36 *mən tsəzzənts gayuna=si, ibts a=s lqənrət*
 from reservoir **yonder**=DAT 3P-IMPF-say 3S=DAT channel
 From the reservoir on, they call it the “water-channel”. (N8p124)
- 5.37 *əgga af=yu i-b-kə gay=si,*
 PAST one=PL 3P-IMPF-kick **hereabouts**-DAT,
af=yu i-b-kə gay=si.
 one=PL 3P-IMPF-kick **hereabouts**=DAT
 Some would kick this way, some would kick this way. (2008-01-19/08)
- 5.38 *a-b-yəskün yan gayu.*
 3S-IMPF-reside 1P Gen **hereabouts**
 He lives in our neighbourhood. (2008-01-19/08)

Identificational words are number-invariant forms used to identify entities by siting them in the surroundings or the discourse:

5.39 *tsuɣ=ayu?*

what?=ID.PROX?

What's this? (2007-11-15/05)

5.40 *itsa asiyyəd n laḥsab=adzi: wahi, tsani...*

lo ostrich GEN counting=ID.ANA “one” “two”...

This [already mentioned by speaker] is ostrich-counting: “one”, “two”... (2008-02-05/9)

5.41 *m^wūšš=ayuna*

cat=ID.DIST

That is a cat (N8p35)

The difference between *ayudzi* and *adzi* is not clear from translation, but corpus examination suggests that the former has an additional contrastive sense, as in the following dialogues:

5.42 *n-ba-b-nəg iytsa ʕan tsə=y=ayu.*

2S-ST-IMPF-look lo 1SGen brother=PL=ID.PROX

As you see, look these are my brothers.

ʕan tsə bya=y ḥajj muḥamməd, a-b-dza atsəy

1SGen brother big=ID.PROX Hadj Mohamed, 3S-IMPF-make tea

This is my big brother, Hadj Mohamed, he's making tea.

əlmadan ayudz iytsa a-b-nnəg nn uyuna=si

Madani ID.CTR lo 3S-IMPF-look 2SGen whatsit=DAT

This is Madani [his other brother], look he's looking at your whatsit [computer] (2007-12-22/12)

or:

5.45

A: *skudz əgga aʒarəz ba, lʔlanda, tsamaʔəts, kull əgga ʕarʔəm=a.ka, iyyəh.*
 wood PAST tree sp exist ephedra, tree sp all PAST numerous=3S.LOC yes
 Wood: there used to be “azarez”, ephedra, “tamadet”, they were all plentiful, yes.

B: *awərbəl*
 belbal-tree
 The belbal-tree.

A: *həh? aywa awərbəl=ayudz a-ba ɣuna, abə bumalħa*
 huh? well belbal-tree=ID.CTR 3S-exist whatsit, 3S-exist Bou-Malha
 Huh? Well, that's the belbal-tree, it's found at whatsit, at Bou-Malha.

ana/ini “3S/3P” are used in a syntactically similar way; see Nouns.

The filler word used to substitute for a word not recalled is *ɣuna / uɣuna*, obviously from the distal demonstrative; in my corpus, in fact, this usage appears to be far commoner than the distal demonstrative:

5.46 *ɣuna=f^w kədda, ssənduq=f^w kədda wəlla tsuy=adzi*
whatsit=one little, box=one little or what=ID.ANA
 a little whatsit, a little box or whatever that is (2007-12-16/7)

This differs both from other Songhay languages, which, like English “thingumabob / thingamajig”, typically base their equivalents on *haya* “thing” (eg KC *hajje/hayajje* < thing+child, KC/KS *haywana* < thing+POSS, TSK *həbútò*), and from Maghrebi Arabic *laxūr* (lit. “the other”), and must be a calque from Berber: as noted above, “whatsit” in both Ait Seghrouchen Tamazight and Siwi is the masculine singular distal demonstrative. However, like its Songhay counterparts but unlike Berber, it can be used

verbally as well as nominally (I heard no cases of it being used to replace an adjective).

Compare:

5.47 *lǔxxǔd nə-γγun-ana...*

when 2S-**whatsit**-3SEmph

When you've whatsited it [in context: fenced it]... (2008-01-01/8)

5.48 *a-m-tnu, γəyr a-m-γuna šwiyya*

3S-IRR-rise, just 3S-IRR-**whatsit** a bit

It (truffle) will come up, it'll just whatsit a little. (2007-12-30/17)

to KC:

musa foo na no-o hajje ga nda?

manner which Foc 2SgS-Impf whatchamacallit 3SgO with?

How do you whatchamacallit it? (Heath 1999a:154)

Every pronominal relative clause requires a head. Most are based on the demonstrative system: ones referring to entities use the pronominal demonstratives *uγ(u)* and *uγudz(i)* “who, which”; manners use *məsdz(i)* “the way that”; locations use the locative demonstratives *gaγ(u)* “where(ver)”, *dzǔγdz(i)*, *əqədz(i)* “where”; times use *lǔxxǔdz/xǔdz* or *gǔndz*, probably historically containing anaphoric *-dz*. There is at least one exception: an exhaustive relative “all that” can be expressed as *idz*. Not strictly part of the relative system is “possessor of”: *tsən*. I include it here because it is etymologically a borrowed relative pronoun, and because, in taking a postposed object, it does not fit into the genitive system at all.

For adnominal relatives, three possibilities are available. Relatives without a head noun, and adnominal definite relatives, use the appropriate proximal or anaphoric demonstratives, depending on whether the head is already present in the discourse or not. The clitics *=γu/=dzi* must be hosted by a nominal head; where a preposition intervenes between the head and the relative pronoun, the pronominal forms *uγu* and

uyudzi reappear. For indefinite adnominal relatives, the relative clause is simply placed after the noun phrase with no demonstrative.

Presentatives per se are not a strongly grammaticalised function, but a common marker for drawing the listener's attention to a present situation is the clause-initial particle *iytsa* (glossed “lo”), presumably to be related to Berber presentatives such as Kabyle *aṭa-n*, eg:

- 5.49 *iytsa a-ab-səlləm=ya.ka*
 lo 3S-PROG-greet=3S.Loc
 Look, he's greeting us. (2007-12-22/12)

5.3.1.1 Origins

The demonstrative system is almost entirely Songhay in its morphemes, but has developed in a manner taking it far from its relatives.

The locative adverbs based on *aḍa* “place” (also a separate noun) probably result from a reanalysis of **dayo* “place” (cp. Tasawaq *dáyò* (Nicolai 1981:276), KS *doo*, def. *dog-oo*) as **da-yo* with the proximal clitic, leading to a new noun **da* “place” to which the Berber nominal prefix *a-* got attached (cp. cases like *a-fəndu* “blind man” from etymologically Songhay *fəndu* “blind”.) *dzūydzī* “there” represents an un-reanalysed reflex of the same word plus anaphoric *dzi*, cp. KC *doodi/dooti*. *dzina* is probably to be compared to Songhay forms like KS *noo din* “anaphoric demonstrative adverbial”, though the apparent reversal of word order is problematic (see also the discussion of **-na* below.) *tsəkka* has no obvious Songhay cognates, but brings to mind *tsəksi* “now”; the pair might be interpreted as a stem *tsək-* plus locative *-ka* and dative/allative *-si* respectively. However, the only cognate so far noted for *tsəksi* is itself in a Berber language, Tetseret *təkfidda* (Attayoub (2001) via Lux (np)), suggesting that if there is any such relationship it too results from reinterpretation. The *ga-* in the approximative locatives is probably to be linked to **gere*, eg KS *jere* “beside”, also reflected in Kwarandzyey *gaga* “beside”.

The adverbial stem *məs-* (also in *tsamisi/tsaməsyu* “how”) unproblematically reflects a pan-Songhay form, cp. KS *misa* “way, manner; matter”. Heath links this to Arabic *mas'alah* “issue, problem”, but it seems unlikely that such a basic word would have been borrowed from Arabic into proto-Songhay.

Though built largely of Songhay material, the identificational forms clearly reflect southern Moroccan Berber influence; their structure appears unique within Songhay. The *a* morpheme may be identified with the focus marker *a*, a Berber loanword (see Focus particles), though it differs in being unstressed. This makes them precisely comparable to Ayt Seghrouchen Tamazight *ay-u* (prox.), *ay-inn* (dist.), *a-din* (anaph.), and Tashelhiyt *ay-a*, *ay-ad* “c'est”, each similarly combining a prefix *a(y)-* with a gender- and number-unmarked demonstrative element and likewise placed after the subject. Thus (Bentolila 1981:97):

asfar Wdin tngu tiwa ayu “le remède de celui que tue le dos, **ce ci**”

has tDin yurwn ayiN “**c'est** seulement celle qui a mis bas”

ur ieqil iz-d uma-s a-din “il n'a pas vu que **c'était** son frère”

For the principal demonstrative morphemes' origins, compare:

Table 61.

	Proximal	Anaphoric	Distal	Base for pronominal use
Songhay:				
Kwarandzyey	- <i>yu</i>	- <i>dzi</i>	- <i>yuna</i>	<i>u-</i> (anaph. <i>uyu-dzi</i>)
Tasawaq (Alidou :63)	- <i>yo</i>	- <i>zi</i>	- <i>yo sèn</i>	?
Tadaksahak	<i>óda</i> <i>o</i> (broad reference – restricted usage)	<i>adí</i> <i>ayda</i> (same as mentioned / close to	<i>senda</i> <i>na</i> (pronominal) = that opposite <i>na ayo</i> = this	<i>hé</i> “thing”

	(<i>ayo</i> =definite marker)	addressee)	(contrastive)	
KC	<i>woo</i>	<i>di</i>	<i>woo hentu</i>	- (anaph. <i>woo di</i>)
KS	<i>woo</i>	<i>din</i>	<i>woo hendi</i>	- (anaph. <i>woo din</i>)
Berber:				
Tashelhiyt (Aspinion 1953)	<i>-a(d)</i>	<i>-lli</i>	<i>-ann</i> (distant) <i>-anna</i> (near hearer)	m.sg. (<i>γ</i>) <i>wa</i> f.sg. (<i>γ</i>) <i>wi</i> m.pl. (<i>x</i>) <i>ta</i> f.pl. (<i>x</i>) <i>ti</i> unmarked (<i>γ</i>) <i>ay</i>
Zenaga (Taine-Cheikh 2008)	<i>äḍ</i>	<i>iḍḍ</i>	<i>ān</i>	m.sg. <i>ä-</i> f.sg. <i>t-</i> m.pl. <i>əḍn-</i> f.pl. <i>təḍn-</i>
Ait Seghrouchen Tamazight (Bentolila 1981)	<i>-u</i>	<i>-din</i>	<i>-inn</i>	m.sg. <i>w(i)</i> f.sg. <i>t(i)</i> m.pl. <i>yi</i> f.pl. <i>ti</i> unmarked <i>ay</i>
Tamasheq (Heath 2005)	<i>-i</i>	<i>-ənnin/əndin,</i> <i>wənnin/wəndin</i> (recent anaphoric) <i>-daγ</i> (anaphoric)	<i>-di, wədi</i> (near-distant) <i>-én, wén</i> (distant)	m.sg. <i>wa, wə-</i> f.sg. <i>ta, tə-</i> m.pl. <i>wi</i> f.pl. <i>ti</i> unmarked <i>a</i>

The proximal form is clearly reconstructible for Northern Songhay. Since *γ* regularly corresponds to southern Songhay \emptyset , it is tempting also to identify it with southern Songhay *woo*, but in light of Tadaksahak *-o* the possibility must also be considered that it has no southern cognate. Instead, the prefix *u-* on its own might be the Kwarandzyey cognate of *woo*; one fossilised adverb suggests that, rather than being a nominalising

prefix as it seems synchronically, it was historically part of the adnominal form as well: *kiguyu* “tonight” (cp. *kigi* “last night”, KC *čiji* “night”.) In either event, there is no reason to suspect external influence in the proximal demonstrative. The anaphoric form is strikingly similar to some Berber varieties, such as Ait Seghrouchen Tamazight and Tamasheq; but it is even more similar to the forms found elsewhere in Northern Songhay and in Koyra Chiini, with clear cognates throughout the family, and there is again no reason to postulate external influence.

The etymology of the distal form, however, is more problematic. In Southern Songhay, no pro/ad-nominal demonstratives with a specifically distal sense are attested; instead, distal locative pronouns are placed after the unmarked demonstrative (Heath 1999b:131). In Northern Songhay, Tasawaq *γó sèn* exemplifies the same strategy, with *sèn* “over there” a Berber borrowing (cp. Tamasheq *sihén*, Heath (2005a:241)); Tadaksahak *sénda*, from the same source, differs only in the absence of a default demonstrative and the addition of the emphatic particle *da*. In short, neither proto-Songhay nor proto-Northern Songhay is likely to have had a distance contrast in the demonstrative system, apart from locative adverbs. The existence of non-adverbial distal demonstratives in Kwarandzyey is an innovation.

uyuna's etymology presents some difficulties. Assuming the obvious segmentation *uyuna*, two parallels can be found within Kwarandzyey itself. The clearest is the second half of the distal locative *dzina*, discussed above; this suggests the possibility of a derivation from pan-Songhay *no(o)* “there” (Tadaksahak *nóo-se* distal presentative, *no* suffix to plural definite marker to indicate distance, KS *noo* “there”, *no* “it is”, KC *nono* “it is”, TSK *nôn/η* “there”.) The Tadaksahak usage with definite markers seems particularly promising, eg:

<i>ayónda-no</i>	<i>béer-ənən</i>
def:pl-there	be.big-adjz:pl
‘those big ones there’ (Christiansen-Bolli 2010:219)	

However, the correspondence of final *-o* to *-a* would be irregular. One other example is attested, *na* “give” corresponding to southern *no*; but, the correspondence of *o* to *a* for

this word is found throughout northern Songhay (Tadaksahak/Tagdal *na*, Tasawaq *ná*), whereas for “there” the only Northern cognate known, Tadaksahak, has *no*.

Within Kwarandzyey, one might also compare the centrifugal morpheme *-nna*, suffixed to verbs to indicate motion away from the speaker towards another person, with Northern Songhay and Berber parallels (see 7.2.) In Berber, the centrifugal morpheme and the distal suffix are often similar, both typically featuring an *-n*.

Another possible comparison is the Tadaksahak morpheme *na*. Tadaksahak *na* is used with nouns of location to refer to a place facing the orientation of the action; with other nouns in a symmetrical construction to express opposed possibilities; and with the definite marker (*ná ayo*) to express an “object or person pointed at without being called by its name”. But it is itself isolated in Songhay; Christiansen-Bolli suggests a connection with the eastern Songhay transitive perfect bidirectional case marker *na*, but this is semantically implausible. It cannot readily be derived from *no* “there”, since, as discussed, this has a Tadaksahak reflex with the vowel retained. Moreover, the difference in word order is problematic – Tadaksahak *na* always precedes the noun phrase or *(a)yo*, Kwarandzyey *-na* always follows it.

A tempting alternative is to link Kwarandzyey *-na* with Tashelhiyt *-nna* “ce... près de toi” (Aspinion 1953). The plausibility of such a borrowing is strengthened by the coincidence that the Tashelhiyt pronominal masculine singular demonstrative base is *ywa-*, making it easy for bilinguals to equate *ywanna* with *(u)yuna*. If this etymology is accepted, then not only the concept of a distal demonstrative but the word itself would be a borrowing from Moroccan Berber. But even if Songhay *no* was the primary source for *-na*, the phonetic similarity to Berber surely greatly facilitated its reinterpretation; in this sense, it is best regarded as a morpheme with a double etymology, simultaneously Songhay and Berber.

Unlike Berber, Arabic does not seem to have had any influence on the demonstrative system; a proximal/distal distinction is found in both languages, but the similarities noted above suggests that Berber influence alone was responsible for this distinction's

emergence in Kwarandzyey. Indeed, I occasionally heard cases of the anaphoric demonstrative, which has no fixed equivalent in Arabic, being borrowed/code-switched into the Arabic of native speakers of Kwarandzyey, eg:

- 5.50 *ləmqəss=dzi* *walu ma lgi-t-hūm-š*
 scissors=ANA no NEG find-1SPf-3PIObj-NEG2
 K/A =K K/A A A-A-A-A (K=Kwarandzyey, A=Arabic)
Those scissors - no, I didn't find them. (N9p52)

The relative system shows a little more external influence. The temporal relative head *lūxxūdz/xūdz* “when” is probably to be derived from Arabic *l-waqt* “the time”, via Berber, in which *q* is typically a geminate allophone of *γ*, plus anaphoric *dz*. (*gūndz* is presumably to be segmented similarly, but I have not found a suitable source for **gūn-*.) *tsən* “possessor of”, though gender-neutral, looks like a borrowing from a Berber feminine singular form, eg Ait Seghrouchen Tamazight *ti-n* “celle de...”, Zenaga *tən* “celle qui a...” *idz* “whatever, all that” looks unlikely to be inherited (vowel-initial words are comparatively rare in Songhay); the best match seems to be Zenaga *əid^h* in constructions such as *əskər əid tīrəd^h*, “fais ce que tu veux” (Nicolas 1953:40). According to Taine-Cheikh, *əyḍ* (presumably the same word) is a gender- and number-invariant proximal demonstrative.

5.3.2 Adnominal demonstrative syntax

Adnominal demonstrative clitics come after nouns and any adjectives, but before plural clitics and (the rest of) relative clauses. Eg:

- 5.51 *tsiru* *kədda=dz=yu*
 bird little=DEM.ANA=PL
 those little birds (2007-12-30/17)
- 5.52 *ədrə* *inza bya=γ=yu*
 mountain three big=DEM=PL

these three big mountains

- 5.53 *gər=γ* *ba-kka*
 year=REL PF-come
 the year that's coming

In this, Kwarandzyey behaves very much like other Songhay languages; in KC, KS, and TSK (Heath, ch. 5), demonstratives and anaphoric elements follow nouns, adjectives, and numbers and precede relative clauses. In all these cases they are followed by a plural marker where applicable; in KS and TSK, a definite plural marker precedes them as well. Thus compare Koyra Chiini:

bor *bibi* *hiŋka* *woo* *di*
 man black two DEM DEF
 these two black men (Heath 1999a:84)

jere *di* *yo* *kaa* *windi-windi* *ga*
 side DEF PL REL Rdp-encircle 3SgO
 the sides that go around it (Heath 1999a:189)

There is thus no reason to postulate external influence in the syntax here, although the fact that Kwarandzyey adnominal demonstratives are clitics, unlike southern Songhay, may reflect Berber influence (as seen above, Berber adnominal demonstratives are typically clitics.) There is no question of Maghrebi Arabic influence – like Classical Arabic, it normally places demonstratives before the head noun:

- 5.54 *had̄* *əl-kayət̄*, *d̄ik* *l̄ə-m̄ra*
 this.M the-paper, that.F the-woman
 this paper, that woman (N9p20)

5.3.3 Relative clause syntax

The key syntactic distinction in adnominal relative clauses is between definites – using a proximal or anaphoric demonstrative as a clause-initial relative pronoun, with pied-piping of adpositions – and indefinites, with no relative pronoun and with resumptive pronouns rather than gaps. In pronominal relative clauses, the latter strategy is unavailable; a proximal or anaphoric demonstrative may be used, or *idz* for non-specific indefinites, as in:

- 5.55 *idz* *yə-m-γa*, *nə-m-γa*
whatever 1S-IRR-eat, 2S-IRR-eat
 Whatever we eat, you'll eat. (N8p176)

Except in indefinite adnominal clauses, subjects are relativised with a demonstrative/*idz* and agreement on the verb (absent for non-specific indefinites, see Agreement). To highlight their function, demonstratives marking relative clauses will be glossed as REL (=γ-series) or REL.ANA (=dz-series) rather than DEM.

- 5.56 *tsak^w=a* *lmuʃallim=dz* *a-b-tsyu-ndza-ni?*
 who=FOC teacher=REL.ANA 3S-IMPF-read-CAUS-2S?
 Who's the teacher that teaches you? (2007-12-22/13)

- 5.57 *uy=təb=a.tsa* *uyu*, *a-m-g^wa* *ʃar* *a-b-nəggəz*
REL=taste=3S.LOC DEM, 3S-IMPF-sit just 3S-IMPF-jump
 Anyone who tastes of it, (of) this (tea), he'll just start jumping. (2007-12-22/12)

- 5.58 *a-ba* *uy=a-s-f-hina* *a-m-dər* *kikka küll mən aday mʃad əlfilaž*
 3S-exist **REL**=3S-NEG-IMPF-can 3S-IRR-go night all from here up to town
 There are (people) who can't go by night at all from here to town. (2008-01-19/08)

- 5.59 *mahəyn* *tsumə a-ba*. *a-ba* *uyudzi* *a-m-ga* *ləmb=ka...*
 how many locust 3S-exist. 3S-exist **REL.ANA**3S-IRR-find garden=LOC
 There are so many (kinds of) locust. There's the one that is found in the garden...

- 5.60 *a-ba* *uyudz* *i-b-ka* *i-b-anya*
 3S-exist **REL.ANA** 3P-IMPF-come 3P-IMPF-eat
 There's the one that comes and eats. (2007-12-22/11)

- 5.61 *idz* *bq=γay.si* *ay,* *ayay*
whatever EXIST=1S.DAT ID.PROX 1S
 That's all I've got, me. (2007-12-21/31)

Objects are relativised with a demonstrative/*idz* and a gap (hypothetically shown as Ø and glossed as *t* for convenience):

- 5.62 *ga=dz* *fa-ggwa* Ø *laqnadsa=tsa* *bya-hayni*.
 house=**REL.ANA** 1S-see *t* Kenadsa=LOC big-size
 The house I saw in Kenadsa was huge. (2007-12-28/4)

- 5.63 *nə-m-dz(a)=a.s* *uyudz* *fa-ts=Ø=ni.š* *bwəndz kadda=dzi*
 2S-IRR-put=3S.DAT **REL.ANA** 1S-say=*t*=2S.Dat stick little=ANA
 You put on it what I told you, that little stick. (2007-12-30)

- 5.64 *γar* *flaħsab* *idz* *n-baƣam-gwi* Ø
 just depending on **whatever** 2S-FUT-cook *t*
 just depending on what you want to cook (2008-02-05/17)

Primary postpositions are relativised on by placing the postposition immediately after the relative clause marker (pied-piping):

- 5.65 *uy=s* *n-tsi* “*ibbagən*”, *a-s-əb-bay-i* *kʷəll*
REL=DAT 2S-say “tale.PL” 3S-NEG-IMPF-know-3P all
 He to whom you say “tales” won't recognise it (the word) at all. (N9p42)

- 5.66 *la,* *uyudz=s* *i-b-ts* *amaməḍ*

no, **REL.ANA=DAT** 3S-IMPF-say praying mantis
 No, the one they call a praying mantis. (2007-12-22/11)

5.67 *ljaməʃ=dz=ka* *yə-ggəŋga*
 mosque=**REL.ANA=LOC** 1P-pray
 the mosque in which we prayed

5.68 *ədq=dz=ka* *ʕa-hnu-ts* *binuw*
 place=**REL.ANA=LOC** 1S-go out-hither yesterday
 the place I left yesterday (N8p174)

This conflicts with the placement of postpositions governing the whole noun phrase (including the head) after the demonstrative, before the relative clause. Usually, this does not lead to serious ambiguity; for example, in a sentence like:

5.69 *ha=γəy* *zəd* *uy=ka* *n-bəy*
 ask=1S more **REL=LOC** 2S-want
 Ask me further about whatever you want. (2007-12-22/11)

only the verb of the main clause, not the verb of the subordinate clause, can take an argument in =*ka*, so the interpretation is clear. However, if the whole noun phrase is externally governed by a postposition, and the pivot of the relative clause is also governed by a postposition, then only one of the two can be expressed, inevitably making one of the clauses strictly speaking ungrammatical:

5.70 *tinduf* *a-bya* *ləqşər=d=si* *i-ikna* *tayqəzəmts*
 Tindouf 3S-big village=**REL.ANA=Dat** 3P-make road
 Tindouf is bigger [missing “than” =*ka*] the village for which they made a road.

5.71 *ʕa-zzaw-a* *gə=dz=si* *ggə-γəy* *binu*
 1S-take-3S house=**REL.ANA=DAT** PAST-1S yesterday
 I took it to the house I was [missing “in” =*ka*] yesterday.

I have encountered such examples only in elicitation; in practice, relative clauses that would lead to such a conflict are probably simply avoided, for example by topicalising the heavy noun phrase. However, such “null-prep” relative clauses exemplify a strategy widely attested in second language acquisition, and grammatical in some languages – see Klein (1993).

Prepositions may be relativised on in either of two ways. One is to have a pronominal demonstrative used as a relative pronoun, with pied-piping of the preposition to the front of the clause:

5.72 *ʕan ba=ʔu ʕ-indz uʔdzi gga ʕa-b-ʔəxdəm kull i-bbsa=ʔəʔ*
 1SGen friend=PL **1S-COM REL.ANAPAST** 1S-IMPF-work all 3P-pass-1S
 My friends with whom I was working were all older than me. (2007-12-06/AM)

5.73 *zu-ts=ʔəʔy.s n-indz uʔu nə-ddər likul binu*
 bring-hither=1S.DAT **2S-COM REL** 2S-go school yesterday
 Bring me the one you went to school with yesterday (N8p149)

5.74 *zu-ts=ʔəʔy.s imga ndz uʔdz əgga ʕa-b-qūs binuw*
 bring-hither=1S.DAT scythe **INST REL.ANA PAST** 1S-IMPF-harvest yester-
 day
 Bring me the scythe with which I was harvesting yesterday (N8p181)

5.75 *stilu ndz uʔudz əgga ʕa-bb-iktəb a-bbən*
 pen **INST REL.ANA PAST** 1S-IMPF-write 3S-finish
 The pen with which I was writing is finished. (N8p178)

The other is to have a resumptive pronoun in situ:

5.76 *ʕa-s-əgga rrgib=dzi uʔudz əgga=ʔəʔ ʕ-indz-a binuw*
 1S-NEG-find Reguibí=ANAREL.ANA PAST=1S **1S-COM-3S** yester-

day

I didn't find that Reguibi, the one I was with yesterday. (N8p150)

- 5.77 *zu-ts=a.s* *tsəffə=dz* *əgga a-b-qətt* ***ndz-a*** *littsin*
bring-hither=3S.DAT knife=REL.ANA PAST 3S-IMPF-cut INST-3S orange
Bring him the knife he was cutting oranges with. (N9p2)

- 5.78 *tsbq=γəy-ši* *lxəttəm=dz* *n-ttsi q-s-bq* ***ħar-a***
show=1S.Dat ring=REL.ANA 2S-say 3S-Neg-EXIST like-3S
Show me the ring that you said there is nothing like.

Genitives are rarely relativised on (my corpus includes no clear natural examples.) In elicitation, possessives are usually rephrased with ethical datives:

- 5.79 *tsbq γəy.si* *tsəksi=dzi=si*[sic!] *i-qətt an* *ħəngə*
show 1S.DAT ewe=REL.ANA=DAT 3P-cut 3S.GEN ear
Show me the sheep whose ear they cut (N9p41)

- 5.80 *aɾ=dz=si* *nə-qqəʔ* *an bəny n* *ħabi*
man=REL.ANA=DAT 2S-cut 3S head GEN hair
The man whose hair you cut (email)

- 5.81 *ləqfər=dz=si* *nə-bbəddəl* *an* *kəkkəbu*
lock=REL.ANA=DAT 2S-change 3S.GEN key
The lock whose key you changed (email)

One example, if not mistranscribed for *=dz=si an*, suggests that a genitive governing a subject may be relativised on with a relative pronoun followed by the genitive marker:

- 5.82 *tsbq γəy.si* *amkən=dzi* [sic] ***ən*** *tsaskəwts* *ba-yqad*
show 1S.DAT ovine=REL.ANA GEN horn PF-break
Show me the sheep whose horn is broken (N9p40)

Genitives whose heads cannot be construed as affected – notably, those governing secondary postpositions – are relativised on with a resumptive pronoun:

- 5.83 *gɑ=dz* *ʕɑ-ddər* *mʕad an* *gaga binu*
 house=ANA 1S-go until 3S.Gen beside yesterday
 the house that I went up to beside yesterday

To form a noun phrase whose head is characterised by having a certain nominal attribute, *tən/tsən* (a Berber borrowing, as discussed above) is used, forming a nominal which may then itself take demonstrative and plural clitics:

- 5.84 *tən* *aʕəʃʃi*
 ABS.POSS left
 left-handed person (N5p112)
- 5.85 *tən* *tsi* *kkuku=yu*
 ABS.POSS foot long=PL
 long-legged person (N5p112)
- 5.86 *tən* *nṅəwwət* *tsirəy=dzi*
 ABS.POSS flower red=ANA
 that one with the red flowers (N5p112)

Nouns fulfilling an adverbial function are relativised on without a resumptive pronoun:

- 5.87 *a-yzid* *ʕam=dz* *əgg* *i-b-kikəy* *dḍayra*
 3S-born year=REL.ANA PAST 3P-IMPF-build town hall
 He was born the year that they were building the town hall. (N8p181)
- 5.88 *əʕam=dz* *bumədyən* *a-bbʷən*
 year=REL.ANA Boumedienne 3S-die

the year that Boumedienne died (2007-12-06/AM)

Pronominal relatives on locations use the demonstrative locatives as heads:

5.89 *gay* *a-b-bssa* *a-m-ya*
REL.APPROX-LCN 3S-IMPF-pass 3S-IRR-eat
 Wherever it passes, it eats [of locusts] (2007-12-22/11)

5.90 *ʕa-bbəy* *dzuɣdz=ka* *i-b-zu-ts* *iri*
 1S-know **REL.LCN-ANA=LOC** 3S-IMPF-bring-hitherwater
 I know where they bring water from. (N9p5)

With indefinite adnominal relatives containing no demonstrative, by contrast, a resumptive pronoun is obligatory in all these contexts:

5.91 *ʕə-ggwa* *affu* *ʕəmməɾ* *ʕa-sə-kkəɾ-a*
 1S-see one never 1S-NEG-hit-**3S**
 I saw someone I had never hit. (N9p92)

5.92 *i-tsbə=ɣəy.si* *aɖa=f^w* *binəw* *ʕa-dr=a.si*
 3P-show=1S.DAT place=one yesterday 1S-go=**3S.DAT**
 They showed me a place I went to yesterday. (N9p88)

5.93 *ʕa-ddər mʕad amrər gayu* *aɖa=fũ* *i-b-ts=a.s* *ʕbəyda!la*
 1S-go until erg thereabouts place=one 3P-IMPF-say=**3S.DAT** O.
 I went up to the erg, around there, a place they call Obeidallah (2007-12-06/AM)

5.94 *ʕa-ggw affu an ma lʕərbi*
 1S-see one **3S**Gen name Larbi
 I saw someone whose name is Larbi. (N9p89)

5.95 *affu ʕ-bə* *ʕ-indz ana,* *an=a* *bab-gwi=ya.s*

one 1S-EXIST 1S-COM **3SEmph** 3SEmph=FOC PROG-cook=1P.DAT
 Someone I was with, it was him that would cook for us. (2007-12-06/AM)

Viewed as a whole, this system – with obligatory demonstratives behaving like relative pronouns in definite relative clauses, and no demonstratives and in situ resumptive pronouns in indefinite adnominal relative clauses – closely mirrors that of two well-described Berber varieties of the wider area: Ait Seghrouchen Tamazight and Tamasheq. But is this the result of contact in Tabelbala, or can it be reconstructed back to proto-Northern Songhay?

Ait Seghrouchen Tamazight, the northerly variety described by Bentolila, is unlikely ever to have been in direct contact with the oasis. The Berber variety which has most recently had the potential to influence Tabelbala is the Tamazight of the Ait Atta, a tribe that dominated the oasis politically before the French and from whom the main families of Ifrenyu claim descent (see Introduction.) Their variety, however, uses an invariant particle *-(d)da*, not currently used as a demonstrative, in relative clauses (Willms 1972:183); this may be linked historically to *-ddəγ*, still used as an anaphoric marker. While available descriptions do not indicate how indefinite adnominal relative clauses are treated among the Ait Atta, the construction described by Bentolila, with a resumptive pronoun and no participle, is reported to be absent from many southerly Tamazight varieties (Leguil 1992:78). Demonstratives are regular in relative clauses in Tashelhiyt (Aspinion 1953:172), which may have been an influence on Tabelbala at an earlier stage; it in fact presents a striking parallel to Kwarandzyey in using exactly two out of the four possible demonstrative categories, the medial (*nna*) and the anaphoric (*lli*). However, according to Leguil (*ibid* 1992), it does not share the indefinite construction either.

Other Northern Songhay varieties, influenced only by Tuareg and Zenaga/Tetserret, present some parallels to Kwarandzyey. In Tadaksahak, the best described one, Christiansen-Bolli (2010:228) indicates that definite relative clauses are of the form noun head – *ayo* – (postposition) RC, while indefinite ones lack *ayo*. The absence of demonstratives/markers in the indefinite construction is reminiscent of Kwarandzyey;

but unlike Kwarandzyey, no resumptive pronoun occurs, and the adposition is fronted as usual. For other (less well described) Northern Songhay languages, there is no evidence for a definite-indefinite distinction in relative clauses; indeed, while Kossmann (2003:ms) notes for Tasawaq that relative clauses may occur with or (more rarely) without the demonstrative, this does not correlate well with indefiniteness in his examples. However, for all Northern Songhay languages it is clear that the demonstrative is used in relative clauses. For Tasawaq, according to both Kossmann and Alidou (1988), most relative clauses use the demonstrative =*ɣo* or *a-ɣo*. For Tagdal, no description of relative clauses exists, but examples confirm the use of a reflex of *aɣo*:

<i>a-sə-əlkəm</i>	<i>barar aɣo</i>	<i>b-baydəg</i>	<i>a-n</i>	<i>azərəf</i>
3S-CAUS-follow	child	DEM	IMPF-steal	3S-GEN
‘He had the child who stole his money followed.’ (Benítez-Torres 2008:13)				

But for none of the other Northern Songhay languages is there clear evidence for relatives productively formed with the anaphoric marker.

Relative clauses in Zenaga, sadly, are not adequately described. Judging from the examples in Nicolas (1953:40) and Faidherbe (1877:11), the anaphoric demonstrative *i?d* can be used to introduce relative clauses, but Nicolas notes that relative markers are often absent; it is not clear whether this correlates with indefiniteness or not. The Tamasheq strategy (Heath 2005a:624) is strikingly similar to that of Tadaksahak; there, definite relative clauses are introduced by a demonstrative from the least marked *wa / i* series, while indefinite adnominal ones simply follow the noun phrase with no demonstrative, and in either case – unlike Kwarandzyey – the following relative clause is gapped (except for possessors and relativisation out of an embedded clause, where resumptive pronouns are used.) Pending further documentation of Zenaga, the obvious conclusion is that Tadaksahak at least has calqued its relative clause formation strategy off Tuareg, while all Northern Songhay relativisation strategies show Berber influence at least in the use of demonstratives as relative markers. Comparing southern Songhay strategies confirms this impression.

In southern Songhay, the relative marker is a fixed form along the lines of *ka*, eg Koyra Chiini *kaa*, Djenné Chiini *kaa / kama*, Koyraboro Senni *kaŋ / kan / ka*, Tondi Songway Kiini *kâ*, Zarma *káá*, which sometimes takes the plural marker but does not vary with definiteness (Heath (1999b:242), (1999a:187), Tersis (1968:202)); in TSK, the relative clause is most likely to be followed by a “right-edge marker” *n-ó*: when definite, but the correlation is not perfect (Heath 2005b:192). Except in basilectal Djenné Chiini, where it may follow (Heath 1999a:408), the relative marker normally starts the relative clause. Depending on syntactic function and language, it either behaves like a relative pronoun (filling a gap in the following clause) or introduces a relative phrase containing an in situ resumptive pronoun. It does not seem plausible to link this to the pan-Northern Songhay strategy with **-ɣo*; neither the consonant nor the vowel correspond regularly. Rather, the Northern Songhay strategy must be taken as a calque off Berber – probably Tuareg, possibly Zenaga – replacing what was presumably the original strategy.

This suggests that the close convergence of Kwarandzyey relative clause strategies to Berber has come about through two or three stages of convergence rather than one. Proto-Northern Songhay adopted from Berber the strategy of marking relative clauses through (unmarked, by default proximal) demonstratives, abandoning (if it ever possessed) the *kaa* strategy. Under influence from a Southern Moroccan variety or from Zenaga, Kwarandzyey came to allow anaphoric as well as (etymologically unmarked) proximal demonstratives, probably after separating from the rest of Northern Songhay; an alternative hypothesis would be that, once Zenaga receded, other Northern Songhay languages lost the anaphoric option due to heavy Tuareg influence. Finally, and most clearly in its current northerly location, Kwarandzyey also adopted the strategy of forming indefinite relative clauses with resumptive pronouns (it may already not have used demonstratives in this context) – either directly from Arabic or from some inadequately documented variety of southern Tamazight resembling Ait Seghrouchen in this respect.

5.4 Conclusions

Demonstrative and relative morphemes in Siwi and Kwarandzyey show conspicuous resistance to borrowing, though Kwarandzyey shows some marginal cases. But calquing has had rather more influence on the organisation of the system than might have been expected from its resistance to lexical borrowing; the demonstratives show significant reorganisation, while the relative structures have reached the point of near-perfect isomorphism with their Arabic or Berber counterparts respectively.

6 Adpositions

6.1 Definitions

The term **adposition** is usually used to refer to a segmentable word that identifies a noun phrase's grammatical or semantic relation to a head outside the adpositional phrase – a word that takes an obligatory NP complement to form an adverbial or adnominal. However, the frequent similarities between adpositions and complementisers, notably prominent in the languages under discussion, make this definition inconveniently narrow. Instead, following the analysis advanced in Huddleston and Pullum (2002), I will assume that adpositions – like verbs – may take nominal or clausal complements (variously marked) depending on their lexical properties, and may in some cases be lexically permitted not to take a complement at all. Thus an adposition is a segmentable word that identifies its complement's grammatical or semantic relation to a head outside the adpositional phrase without filling a gap in its complement. Extending the analogy between adpositions and verbs would suggest that we should recognise “intransitive” adpositions that never take complements; Huddleston and Pullum do so for many English words traditionally treated as adverbs of location and time, but, on explicitly traditionalist grounds (“we will not depart further from the traditional account than is justified”, *ibid*:612), they exclude all other “intransitive” adverbs, including such plausible candidates as adverbs of manner, which throughout North Africa tend to be or to derive from instrumental prepositional phrases. The limits of this category will require further discussion. However, my main interest here is in the treatment of the complements of borrowed prepositions. I will therefore restrict myself for convenience in this chapter to adpositions which can take complements and to classes of adverbs mainly etymologically derived from adpositional phrases. Complementisers proper like *that* or *whether*, serving to subordinate clauses and to mark them as declarative or interrogative, must be distinguished from what we are calling prepositions, as independently indicated by Rizzi (1997), and will not be treated in this chapter.

Within the category of adpositions, a distinction may be made between adverbial and adnominal ones. In the languages under discussion, genitive adpositions seem to be

exclusively adnominal: verbs do not subcategorise for them. (This contrasts with English, where, for example, “tire” takes an object marked by “of”.) On the other hand, primarily adverbial prepositions can in some instances appear adnominally, as in English “my relative *through* marriage”, “my house *in* Spain”.

Extending the analogy of adpositions to verbs further, just as many languages (eg Persian) have a comparatively small class of monomorphemic verbs alongside a much larger and more open class of compound verbs formed from an invariant noun-like stem and a supporting verb, so too may adpositions in many if not all languages be divided into monomorphemic ones and noun-like ones that require a supporting adposition. In the languages under discussion and cross-linguistically, the latter is normally the genitive – a statistical universal reported by Stolz (1992:74), via Plank et al. (2006), is that “if a case is governed by a local postposition, then this case will preferably also be used to express possession (i.e., genitive).” For convenience, I will therefore define a **primary adposition** as one linked directly to its complement, as opposed to a **secondary adposition**, an adposition linked to its complement through another adposition, normally the genitive. From a historical perspective, secondary adpositions may be seen as an intermediate stage in the grammaticalisation of full nouns to adpositions (Lehmann 1985). Nominal characteristics that they commonly retain include the ability to head a genitive construction, to be the complement of primary adpositions, and to fill the role of subject. Whereas word order (pre- vs. post-position) seems to behave as a lexical characteristic of primary adpositions – both language-internally in languages with both prepositions and postpositions, and between languages in code-switching and borrowing – for secondary adpositions it is determined by the characteristics of the linking adposition, and thus usually of the genitive construction.

6.2 Background comparison

There are significant differences between Arabic, Berber, and Songhay in their handling of adpositions. All three languages have prepositions:

Arabic (Classical)	<i>'ilā rabb-i-ka</i>
	to lord-GEN-2SgM
	'to your lord' (Qur'ān, al-Fajr)
Berber (Kabyle)	<i>gər w-ulli</i>
	among M.GEN-sheep_PL
	'among the sheep' (Mahfoufi 2005:116)
Songhay (KC)	<i>nda kuuru</i>
	with skin
	'with leather' (Heath 1998a:317)

But Arabic and Berber are exclusively prepositional (the closest Berber comes to a postposition is the locative suffix *-i* in Ghadames and Awjila), whereas all known varieties of Songhay have postpositions as well as prepositions¹²:

Songhay (KC)	<i>hari kuna</i>
	water Loc
	'in(to) the water' (Heath 1999a:105)

The distinction between primary and secondary adpositions is largely irrelevant to Arabic or Southern Songhay, in both of which the default genitive construction involves direct juxtaposition. However, in Berber and Northern Songhay the default genitive construction involves an *n* intervening between the possessor and the possessed, enabling a clear distinction between primary and secondary adpositions. In Berber, the possessor follows the possessed, whereas in Northern Songhay – as in Southern – it precedes it; secondary adpositions with the genitive are therefore prepositions in Berber and postpositions in Northern Songhay.

12 This can readily be explained by historical considerations on the basis of grammar-internal factors. The principal language-internal sources of adpositions are verbs and nouns. Thus in a strict VO, NGen language, the main internal sources for adpositions yield prepositions; in an OV, GenN language, they likewise yield postpositions. VO and GenN languages, like Songhay (much of southern Songhay is predominantly OV, but only one language, TSK, does not also have VO verbs), have potential sources for both.

6.3 Predictions

In contact situations of all kinds, adpositions show a strong tendency to preserve their order with respect to their complements, formulated as a rule by Moravcsik (1978:113):

- *A lexical item that is of the 'grammatical' type (which type includes at least conjunctions and adpositions) cannot be included in the set of properties borrowed from a language unless the rule that determines its linear order with respect to its head is also so included.*

This makes a clear-cut prediction for primary adpositions; it is much less clear whether it should be taken to predict anything about secondary ones. Since drawing a distinction between primary and secondary adpositions is problematic in Arabic, this limits its applicability here.

Contact influence may also be examined at a typological rather than lexical scale. With particular reference to the northern Iranian zone from the Caucasus to Pamirs, but also mentioning Ethiopia and Estonian, Stilo (1987) has noted that historically prepositional languages under heavy influence from postpositional ones, or vice versa, commonly develop a mixed typology, featuring both prepositions and postpositions, and more frequently than one might expect even ambipositions. Songhay is already mixed-typology in this respect; on this basis, one might (wrongly) expect to see ambipositions developing in Kwarandzyey, and would expect not to see postpositions or ambipositions in Siwi.

One potential route for the entrance of influence is code-switching; to the extent that this route is used, one may expect the results to conform to the situation observed there. The model making the most detailed predictions in this respect is Myers-Scotton's MLF model, based on the following principles (Myers-Scotton 1993:83), where the Matrix Language is the main one and the Embedded Language is the superstrate, and where the relevant speakers are fluent in both:

The Morpheme Order Principle: in Matrix Language + Embedded Language constituents consisting of singly occurring Embedded Language lexemes

and any number of Matrix Language morphemes, surface morpheme order (reflecting surface syntactic relations) will be that of the Matrix Language.

The System Morpheme Principle: in Matrix Language + Embedded Language constituents, all system morphemes which have grammatical relations external to their head constituent (i.e. which participate in the sentence's thematic role grid) will come from the Matrix Language.

The System Morpheme Principle makes a clear-cut prediction: that theta-role-marking system morpheme adpositions must come from the Matrix Language. The Morpheme Order Principle is less clear-cut. An adposition may presumably be borrowed in either of two ways:

- by generalisation from Embedded Language islands consisting of an adposition plus a noun that happens to have been borrowed into the Matrix Language;
- through use as a singly occurring Embedded Language lexeme.

In the former, presumably less likely, case, Embedded Language order – and Moravcsik's generalisation – will hold. In the latter case, the Morpheme Order Principle predicts – contrary to Moravcsik – that the surface morpheme order will be that of the Matrix Language. However, this begs the question of what the Matrix Language order should be in a language with both pre- and post-positions. This can be determined, to some extent, by unraveling the semantic characteristics of the two word classes; but if an Embedded Language adposition fulfills a function originally systematically not expressed by adpositions in the Matrix Language, it is not clear that this principle can be applied.

However, she also acknowledges the possibility of a “composite Matrix Language”, emerging in particular from lack of fluency in the target Matrix Language. To map out such situations, she has proposed the 4-M model (Myers-Scotton 2002), dividing morphemes up by three features intended to reflect different stages at which they are inserted in the process of formulation: +/- [conceptually activated], +/- [thematic role

assigner/receiver], and +/- [refers to grammatical information outside of Maximal Projection of Head]. She labels the resulting types as follows:

Table 62.

	conceptually activated	thematic role assigner/receiver	refers to grammatical information outside of Maximal Projection of Head
content morpheme	+	+	-
early system morpheme	+	-	-
late outsider system morpheme	-	-	+
bridge late system morpheme	-	-	-

In her terms, adpositions can belong to any of the latter three classes: adpositions with specific semantic content such as *above* are early system morphemes, while adpositions with purely grammatical functions such as *by* or *of* are late system morphemes. Genitive markers are typically bridge late system morphemes; other grammatical adpositions will normally be late outsider system morphemes. In fluent bilingual codeswitching, late system morphemes will always be from the Matrix Language. She cites evidence that early system morphemes are acquired earlier in second language acquisition, as claimed by Wei (2000), and retained later in first language attrition than late system morphemes (Myers-Scotton & Jake 2000:4). This leads to two expectations: that lost adpositions are more likely to be late system morphemes, and that borrowings are more likely to be early system morphemes.

Some types of contact influence – especially, but not exclusively, substratal – derive from imperfect second language acquisition. To the extent that this is applicable, we expect to see the types of errors reported in the SLA literature. Contrastive analysis might lead one to expect learners to mistakenly apply their own language's rules on adpositional placement, but in fact no reported instances of postpositions being placed

prepositionally or vice versa have been encountered, and their absence is explicitly noted in some cases; thus Punjabi learners of English are found to consistently place prepositions before the verb, contrary to the strictly postpositional Punjabi pattern (Jackson 1981). (The partial exception of genitive constructions is discussed below.) The more usual error resulting from a clash between the native and target languages on adposition placement, instead, is omission. Native speakers of postpositional languages tend to omit prepositions while learning prepositional ones, and do so more frequently than native speakers of prepositional ones: this is robustly true for Turkish learners of Dutch compared to Moroccan ones, as independently shown by Jansen et al. (1981), Appel (1984), Perdue (1993:23), and Extra and van Hout (1993:397); for Chinese and Japanese learners of English compared to Spanish ones (Schumann 1986); and for Finnish learners of English (Jarvis and Odlin (2000), via Odlin (2003).) Apart from word order issues, another well-attested SLA phenomenon is semantic overgeneralisation of adpositions by second language learners, reported by Extra and van Hout (1993:384) for Turkish and Moroccan Arabic speakers learning Dutch, by Schumann (1986) for Spanish, Japanese, and Chinese speakers learning English, and by Jarvis and Odlin (2000) for Finnish and Swedish speakers learning English.

The predictions of syntactic theories depend crucially on their treatment of cross-linguistic differences in adpositional syntax. One solution would be to treat “prepositional” vs. “postpositional” as a global parameter, in the spirit of Principles and Parameters. This would predict, contrary to Moravcsik and Stilo above, that any contact-influenced change should be sudden and apply across the board. It runs into difficulties with languages like Northern Songhay, where both prepositions and postpositions exist and are syntactically clearly differentiated from nouns and verbs and from each other; these can be resolved by postulating movement, but since movement can be used as a device to generate any desired order, this begs the question of why this difference should be modelled parametrically in the first place. More recently, Kayne's (1994) approach – in which all head-final orders are accounted for as the result of complement to specifier movement – has come to be preferred in the generative tradition. Movement is motivated by feature checking, and differences in movement boil down to lexical differences in the properties of functional categories (Chomsky

1995:419). Generally, this approach predicts that it should be possible for different adpositions to be lexically specified for insertion in different functional categories, but also then to undergo head movement to higher positions in the tree; without further specifics this yields no applicable predictions. But to account for the possibility of circumpositions, such a theory must postulate at least two layers in the PP; to account for semantic and word order facts in Dutch, where pre-, post-, and circum-positions are all found, in this framework, Koopman (2000) ends up requiring three distinct functional heads, Path (for motion) > Place (for location) > P (for the lexical item). If Koopman's analysis applies cross-linguistically, then in a language with both spatial pre- and post-positions, Place will be postpositional and Path prepositional, assuming that the position to which the complement raises is constant; but this prediction is not borne out for Kwarandzyey, where both Place and her Path are in general postpositional. If, in the spirit of this analysis, we add yet a fourth head Delimitation above Path, for delimiters such as “until” (Beaver 2004), then the dominant Kwarandzyey pattern could be expressed; but even this pattern has a few borrowing-induced exceptions. This approach also suggests that the syntax of loans should be determined by their semantics rather than their source, which is often but not always true here.

6.4 Siwi

Unsurprisingly, given that it is a Berber language and that it is influenced almost exclusively by Arabic, Siwi too is exclusively prepositional. The Siwi adpositional system shows a systematic contrast between primary prepositions, which govern noun phrases directly, and secondary prepositions, usually mediated by the genitive particle *n*, more rarely by dative *i* or superessive *af*. Within primary prepositions, another contrast may be set up between ones that take direct pronominal suffixes (sometimes with a suppletive stem), ones that take genitive pronominal suffixes, and ones that govern standalone pronouns directly. Secondary prepositions typically refer to more specific spatial locations and take only nominal complements or no complement, whereas primary ones may take clausal complements; however, primary prepositions include some spatial ones with exclusively nominal objects which can appear with no complement, such as *zdat* “in front of”, so no clear-cut semantic dividing line between

the two categories can be drawn. A more clear-cut morphological line, however, may be established: as will be seen below, secondary adpositions consistently start with either the Berber gender/number prefix (and historic article) *a-/ta-/i-/ti-* or the Arabic article *al-*, whereas primary ones consistently do not.

To which of the two categories do Arabic loans get assigned? Arabic has no distinction between primary and secondary prepositions in the genitive, so these would be expected to be ambiguous; on the other hand, secondary prepositions with *i* or *af*, for which Arabic does have equivalents, might be expected to be calqued. The morphological criterion noted above is not directly applicable: no Arabic preposition or noun can appear with an article when taking a direct complement. This suggests that, as a precondition for an Arabic preposition to be borrowed as secondary with the genitive, it should have to be able to appear without a complement; but it makes no prediction about which of those prepositions will be borrowed as secondary. If nouns were significantly easier to borrow than prepositions, one might expect all borrowings to enter as secondary postpositions, but this is not borne out.

6.4.1 Siwi adnominal adpositions

Only one adnominal adposition is known, the pan-Berber genitive particle *n*. Arabic has two methods of handling genitives; the originally dominant one, direct head-initial juxtaposition (not productively attested in Siwi), and juxtaposition with an intervening particle, eg Egyptian *bitāf*, typologically comparable to the Berber method. In one subset of nouns, Arabic and Berber differ systematically: common kinship terms in Arabic normally use juxtaposition, while in Berber the kinship term has the pronominal possessive suffix attached and then the genitive phrase. In this respect, too, Siwi aligns with Berber rather than Arabic:

- 6.1 *ámm^wa-s* *n* *akúbb^wi* *da-wó-k*
 brother-3S GEN boy MOD-that.M-2:M
 that boy's brother (2002-03-18/Story of Two Boys)

Siwi *n* has a rather wider range of functions than is typical for Berber; for example, it is frequently used between nouns and adjectives (see Adjectives chapter), and sometimes placed before relative clauses, or used to form nominals from other parts of speech. These functions appear not to owe anything to Arabic influence, and hence will not be explored here.

6.4.2 Siwi locative and dative adpositions

6.4.2.1 Simple

A small set of common prepositions, all of Berber origin, simply locate the figure in a ground:

- *g* “in”, cp. Kabyle *dəg*
- *af* “on”, cp. Kabyle *ɣəf*

Dəgyaʔ “at night” is synchronically unanalysable but historically linked to the former. Metaphorical extension of the latter yields the irregular but partially analysable adverb *af-ula-ħħila* “for no reason”. An unanalysable reflex of the Arabic *ʕalā* “on” is found in the borrowed adverb *ʕlaʔul* “regularly, immediately” (< on length).

Alongside these are prepositions identifying the path role of the ground:

- *s* (with inherent locatives) / *sg* < *s* + *g* “from, via, since”; *s* also = instrumental “with”. Cp Kabyle *s*, *si*.
- *i* “to” (allative/dative); cp. Kabyle *i*

While all of these are of Berber etymology, one probable calque from Arabic is present: the use of *i* to mark both the allative and the dative. Less heavily Arabised Berber languages typically separate the two, reserving *i* for the dative alone – eg Figuig *l* vs. *i* (Kossmann 1997); Ouargla *n* vs. *i* (Delheure 1987); Taznatit *ɣa* vs. *i* (Boudot-Lamotte 1964); Chaouia *ɣr* vs. *i* (Penchoen 1973). This includes the geographically closest

Berber language, Awjila (Paradisi 1960), where the allative (and locative) are marked by a suffix *-ī* whereas the dative uses a preposition *ī/y*, eg (Paradisi 1961):

y-ûnā ammûd-ī
 3MS-enter.PT mosque-LOC
 “Entrò nella moschea” (II)
 He entered the mosque.

ye-lgóm a-y-efk-itēneṭ y-elhūdī
 3MS-refuse.PT IRR-3MS-give-3PFObj DAT-Jew
 “Si rifiutò Žhâ di darle all'ebreo.” (V)
 He refused to give them to the Jew.

There are traces of a similar situation in Siwi: the main Siwi villages of *ayǝrm^{wi}* “Aghurmi” and *šali* “Siwa Town”, as well as the toponym *tagzarti* around Fatnas Island (N2p95), have names that can plausibly be derived respectively from the pan-Berber word for “village” (cp. Awjila *aġârem*, Taznatit *ayam* with regular loss of *r*), not used in modern Siwi, Siwi (and pan-Berber) *šal* “land”, and Berber (eg Kabyle) *tigzirt* “island” (< Ar. *jazīr-at-*), plus the locative/allative suffix **-i*. Note that El-Fogaha, which has also extended *i* to the allative (see below), also shows traces of **-i* – its word for “village” is *aġârmi* (Paradisi 1963:116).

On the other hand, a couple of other easterly Berber languages (also heavily Arabised) appear to display the same extension of a dative preposition to the allative. Nafusi in eastern Libya uses *in* (cp. Siwi *in*, below) for both:

ugûr-aġ in Ṭarâbles
 go.PT-1S to Tripoli
 “andai a Tripoli”
 I went to Tripoli. (Beguinet 1931:124)

ye-ml-âs *in* *bābâ-nnes*
 3S-say-3SDat to father-his
 “disse a suo padre”
 He said to his father: (*ibid* 143)

El-Fogaha, in central Libya, uses *i*:

y-uġâr i-žéldet
 3S-go to-Zella
 “andò a Zella”
 He went to Zella (Paradisi 1963:99)

enni-ġ y-amâr
 say-1S to-man
 “ho detto all'uomo”
 I told the man (*ibid*)

For the ill-documented and extremely heavily Arabised Berber of Sened in Tunisia (now extinct), Provotelle (1911:75) also gives a couple of examples suggesting use of *i* for allative as well as dative functions:

aïtcha *ad-es-er'-ed* *i-el Qalâat*
 tomorrow IRR-come-1S-hither to-Sened
 “demain j'irai à Sened” (*sic*)
 Tomorrow I will come to Sened.

Cp. *i-oumma* *i* *koull idjen*
 3S-say to each one
 “Il dit à chacun d'eux” (*ibid*:87)
 He told each of them.

The fact that Siwi shares the polyfunctionality of *i* with its closest relative, El-Fogaha,

might suggest that this development predates the split between them. However, such a claim would force us to account for the *-i* in these place names as a borrowing from an earlier Berber substratum more closely related to Awjila, rather than a retention from an earlier stage of Siwi, and would still not push the date of the innovation far enough back to rule out Arabic influence. If Nafusi is more closely related to Siwi than Awjila and Ghadames, then that might be possible. However, all the languages in which this is attested are under unusually heavily Arabic influence even by Berber standards; Nafusi is spoken in scattered communities in a largely Arabophone region, while Sened and El-Fogaha, both of which were already nearly extinct when first documented, were if anything under rather stronger Arabic influence than Siwi. Arabic influence appears to be the most economical explanation, although a conclusive subgrouping of eastern Berber might change this conclusion.

The dative and allative senses of *i*, though marked with the same preposition, are still distinguished through verbal morphology: datives/benefactives are marked through apparently obligatory dative pronominal affixes on the verb stem, whereas allatives are not. Contrast eg:

6.2 *la* *taš-as* *əssərr i* *ħədd*
 NEG give.INT-3SDat secret **to** anyone
 Don't give a secret **to** anyone.

with:

6.3 *t-tasəd* *i* *šal*
 3FS-come.INT **to** country
 It (a bird sp.) comes **to** the country. (N3p11)

This distinction – also made in Nafusi, judging by the examples available, though not in Sened – is certainly not to be attributed to Arabic.

6.4.2.2 Complex

Semantically more complicated adpositions are those that locate the figure within an area defined relative to the ground. Such adpositions can usually appear without an argument, referring to the area in question. Although this property might be expected to be nominal, in fact five of these – all etymologically Berber – are primary prepositions:

Table 63.

	Siwi	Figuig
at (chez)	<i>gən</i> (< <i>g</i> + <i>an</i> “household of”)	-
to (chez)	<i>in</i> (< <i>i</i> + <i>an</i>)	-
next to	<i>səddu</i>	<i>saddəw</i>
in front of	<i>zdat</i>	<i>zzat</i>
behind	<i>zdəffər/zzəffər</i>	<i>dəffər</i>

Note that *zdat* and *zdəffər* can also appear without a complement, eg:

- 6.4 *kan-nni* *ákbər n* *yúsəf yə-n-qṭim-a* *sə-zdát*
 if-COMP robe GEN Yusuf 3M-PASS-cut-PF from-front
 If Yusuf's robe is cut from the front... (Yusuf 2)

Secondary ones – most of whose complements are optional (although not *ajar*) – also all appear to be inherited:

Table 64.

	Siwi	Figuig
on, on top of, above	<i>s-ənniž</i>	<i>(ajənnə)</i>
under	<i>s-adday</i>	<i>adday</i>
in the middle of	<i>g-ammās</i>	<i>ammās</i>
between, among	<i>ažar</i> (cp. also <i>žar</i> “belly”)	<i>jar, wajar</i>
inside	<i>jaji</i>	<i>jaj</i>

Words mainly used as adjectives, as well as one non-adjectival spatial term, are followed by an argument marked with *af* “on”. Their complements are all optional. These include Arabic loanwords, attested as early as Minutoli (1827); in light of the profound influence of Arabic on Siwi adjectives (see Adjectives chapter), this is

unsurprising. What is surprising is that *albarr*, a noun in Arabic, should take its complement the same way (and unlike its antonym “inside”); I have no explanation for this.

Table 65.

right	<i>alənfusi</i>	<i>afusəy</i>
left	<i>aʕəsɾawi</i> < Cl. Ar. <i>aʕsar-u</i> “left-handed” with nisba suffix - <i>āw-iyy-</i> . Attested in Minutoli (1827, 362): “Links” أعسر جهة الشمال.	(<i>zəlməd</i>)
outside	<i>albarr</i> “outside” < Cl. Ar. <i>al-</i> <i>barr-</i> “land”. Attested in Minutoli (1827, 362): “Festland” البرّ موافق.	<i>bərra</i> (also an Arabic loan)

Eg:

- 6.5 أعسراوي افلباب، البر افصندوق
aʕəsɾawi af albab; albarr af ʕʕənduq
 left on door; outside on box
 على يسار الباب، خارج الصندوق
 to the left of the door; outside of the box (elicited, 2009-06-02)

Of these, only the latter two are Arabic loanwords. Laoust (1931:128) reports two more spatial adpositions borrowed from Arabic, <*griba*> “near” and <*dahət*> “inside”; the former is presumably just the borrowed adjective *aqrib* < *qarīb-*, while the latter is not attested in my data.

6.4.3 Siwi delimiting adpositions

The simplest delimiting primary adpositions, used both for events and path spans, taking nominal or clausal objects, derive from Berber:

Table 66.

	Siwi	Figuig
up to, until	<i>al</i>	<i>al</i>
from, since	<i>s, sən</i>	<i>si</i>

Scarcely distinguishable from the former is the primary preposition:

lhədd “up to, to the point of” < Cl. Ar. *li-ħadd-* “to the boundary of”, attested only with nominal complements.

6.6 *əlyáli* *sg* *állon* *i-ban* *lhədd* *ikárkər d* *ifəffán*
 beloved from window 3M-appear up to chest and breasts
 The beloved appeared in the window, up to the chest and the breasts. (N3p20)

6.7 *əčč* *lhədd* *ajiwən*
 eat up to full.VN
 Eat to the point of fullness. (N1p146)

Compare:

6.8 *ál* *ga-jjawn-aṭ*
 until IRR-full-2Sg
 until you're full (N2p256)

6.4.4 Siwi temporal adpositions

“When” is typically expressed by inherited *mak* or *af-ənni* (on-COMP). Vycichl (2005:250) gives *fhal* “when, as soon as” < Ar. *fī ḥāl-*; the one speaker I asked about this did not recognise the word.

baʕd/baʕad “after”, from Cl. Ar. *baʕd-a*, and *qbal* “before”, from Cl. Ar. *qabl-a*. Each of these takes either temporal nominals or clauses. In the case of *baʕd*, the CP may optionally be headed by the general Siwi complementiser *ənni* or by the Arabic element *ma*, specific to *baʕd*. The treatment of these notions across Berber is diverse; in

Tamasheq, nominals use the basically spatial primary prepositions *dat* “before, in front of” and *ḍarāt* “after, behind”, while clauses use the unrelated forms *əndi* and *šāma-d*.

6.9 *yə-ffəkkər* *baʕd* *əlmuddāt* *tá-ṭwəl-t*
 3M-remember after period FSg-long-FSg
 He remembered after a long time. (2008-05-03/0248)

6.10 *báʕad* *i-dúl-ən...*
 after 3-return.PF-PL...
 After they had returned... (Yusuf 1)

6.11 *bʕád-ənni* *y-ils-a-t,* *i-llukk*
 after-COMP 3MS-wear-PT-3MS 3M-get dirty
 After he put it [the robe] on, it got dirty. (2008-04-24/0214)

6.12 *báʕad-ma* *y-xállš-ən* *g* *áčču...*
 after-COMP 3-finish-P at eating
 After they had finished eating... (Yusuf 2)

6.13 *zri-x-tən* *qbəl* *lulí*
 see-1S-3PIObj before Dhuhr
 I saw them before Dhuhr (N2p9)

6.14 *qbəl* *g-usí-x* *y* *isiwan*
 before FUT-come-1S to Siwa
 before I came to Siwa (2008-05-07/0329)

6.15 *qbəl* *nəš* *ga-kim-ax* *i* *lxədmát*
 before I FUT-enter-1S to work
 before I got to work (2008-05-05/0289)

6.16 *šəkk* *af-ənni -* *qbəl* *gá-ħħ-aṭ,* *a-məllál.*

you on-COMP - before FUT-go-2S MS-white

You, it's as if – before you went, you were white. (2008-05-04/0270)

qbəl+NP is attested in one of the earliest sources on Siwi: Caillaud (1826:409) gives <gobelloli> (*qbəl-luli* “before Dhuhr prayer”) as “après-dîner” (“after dinner”), presumably intended as “after lunch”.

madam “as long as” < Ar. *mā dām-a* is attested in elicited data with clausal complements:

6.17 *madam* *əddr-ax-a,* *niš* *ga-šəbr-ax*
 as long as live-1S-PF I IRR-endure-1S
 As long as I am alive, I will endure. (2009-05-24)

6.4.5 Siwi adpositions of manner

Instrumental “with” is pan-Berber *s* (*sgd-* with pronominal suffixes.) This is occasionally used to form adverbs: Vycichl records *s-affar* “secretly” (< with hiding.) A number of adverbs of manner or epistemic adverbs are prepositional phrases borrowed whole from Arabic with instrumental *b-*: *bəlhaqq* “really” (< with the truth), *s-bəddraṣ* “by force” (< with the arm), *bəlsani* “intentionally” (< with the intending), *bəzzabṭ* “exactly” (< with the precision).

bla “without” < Cl. Ar. *bi-lā*, a primary preposition taking nominal complements. Even in the most conservative Berber languages this is usually expressed with an Arabic loanword (eg Tashelhiyt *bla*, possibly even Tamashek *wāla*). It governs full pronouns rather than clitics.

6.18 *la* *a-ḥlu* *bla* *nətta*
 NEG MSg-sweet without 3M
 It's not sweet without him. (N1p146)

- 6.19 *niš ffy-ax bla azər̄ra-nnək*
 I leave-1S without see.VN-2SgGen
 I left without seeing you. (2009-05-24)

For clauses, simple negation with juxtaposition is preferred. Thus “I left without him seeing me” (*xarajtu dūna 'an yarā-nī*) was rendered as:

- 6.20 *niš ffy-ax la-yə-z̄r-i*
 I leave-1S NEG-3M-see-1SgObj
 I left, he didn't see me. (2009-05-24)

Its Classical equivalent can govern neither clitics nor pronouns, being restricted to indefinites (Caspari 1896:II.163). The reflex *bla* is widespread in the Maghreb region, where likewise it cannot take pronominal clitics; however, the usual strategy from Mauritania all the way to western Libya is to suffix pronominal clitics to a special construction *bla bi-* lit. “without with-” (de Prémare (1993), Taine-Cheikh (1988), Madouni-La Peyre (2003), Singer (1984), Yoda (2005).) Neither of the dialects currently affecting Siwi – Cyrenaican Bedouin and Cairene – normally use *bilā* for “without”, making this another of Siwi's many Arabic archaisms. It is thus unsurprising that it is attested in earlier sources: Stanley (1912:441) has “Chance, by” <Bla bilānee> *bla bəlfani*, lit. “without on purpose.”

g-ləbdal “instead of” < *g* “in” + Cl. Ar. *al-'ibdāl-* “the substitution”, taking clausal complements, or as a secondary preposition with nouns. Attested in Stanley (1912:445): “instead” <gilíbdal>.

- 6.21 *aššəy əjjən gələbdəl-ənnəs*
 take one instead-3SgGen
 Take one instead of him (2008-08-03/250)

- 6.22 *gləbdal txúšət gē-qəṭm-ən səgdəs táff'aħt i-qəṭm-ən ifassn-ənnsn*
 instead knife FUT3-cut-PL with-it apple 3-cut-P hands-3SgGen

Instead of with the knife cutting the apple, they cut themselves. (Yusuf 2)

6.23 جليدال ن تخواست

gləbdal n txuʂət

instead GEN knife

instead of a knife (elicited, 2009-06-02)

An alternative form with the same meaning and etymology but retaining Arabic phonology, probably a more recent re-borrowing, is *bādāl* “instead of”:

6.24 *bādāl ga-y-ʕámʷar əjneħ, kull-yum yə-ktir-a tláta jnéħ*

instead IRR-3M-make pound, each-day 3S-bring-PF three pound

Instead of making one pound, every day he brought in three pounds. (*Tale of the Two Boys*)

“Like” is pan-Berber *am*.

6.4.6 Siwi prepositions of cause, condition, and purpose

msab “because of”, from Cl. Ar. *min sabab*- “from the cause of”. Commonly expressed elsewhere in Berber (and indeed Arabic) with the primary preposition “on” (Tashelhiyt *f*, Tamasheq *fāl*.) Also takes NPs or clausal complements, the latter normally with *ənni*:

6.25 *msab támart*

because land

because of land (2008-04-27/228)

6.26 *y-if-a amsab-ənni yə-ssín-a anni dí-lla*

3M-find-3MS because-COMP 3M-know-PF COMP 3M-be at

He found it because he knew it was there. (2008-08-03/0250)

I also occasionally heard *ʕlahəq* < *ʕalā ḥaqq*-, and once *mišan* “because” < *min ša'n*-,

(cp. Vycichl (2005:250).) The form I encountered most frequently in natural speech from a number of different sources was *msab*.

kan and *kan-nni* ‘if’ (sometimes with prefix *ən-* < Ar. *'in*, *lo-* < Ar. *law*, according to Vycichl (2005:250).) Cp. ‘if’ <inkan> (Stanley 1912:445). *kan* derives from the Arabic perfect copula (Classical *kāna*), used with the meaning ‘if’ in neighbouring dialects including Cyrenaican Bedouin (Owens 1984) and Bahariya (Drop & Woidich 2007). The form with the added complementiser *-nni* appears to be used to express hypothetical conditions, while the plain one is for more realistic ones; it is not clear how strongly grammaticalised the distinction is. Takes clausal complements only.

6.27 *kan-nni ákbər n yúsəf yə-n-qṭim-a sə-zdát...*
 if-COMP robe GEN Yusuf 3M-PASS-cut-PF from-front...
 If Joseph's robe is cut from the front... [which it wasn't] (Yusuf 2)

6.28 *kan-ənni nətta yə-ttšəl, la di lməškələt.*
 if-COMP he 3M-contact NEG EXIST problem
 If he should get in touch, there's no problem. (N3p20)

6.29 *kan mmála ákbər n yúsəf yə-n-qṭim-a səg ləqfa*
 if then robe GEN Yusuf 3M-PASS-cut-PF from nape
 If, on the other hand, Joseph's robe is cut from the nape... [which it was] (Yusuf 2)

6.30 *kan a-zuwwar, aḍyaḡ.*
 if MSg-big stone.
 If it's big, (you call it) a stone. (N3p15)

6.31 *a-kwayyis kan i-kəsf-i*
 MSg-beautiful if 3MS-reject-1SgDat
 If the beautiful one rejects me... (N2p71)

Purpose clauses are simply marked with the complementiser *anni/ənni*. Compare:

(fact)

6.32 *niš rj-i-x ləmnám anni dí alqés n əṭnáš n íran ..*
 I dream-PT-1S dream COMP EXIST measure GEN twelve GEN stars
 I dreamt a dream that there were a total of twelve stars... (Yusuf 1)

(purpose)

6.33 *həṭṭ-a ánni küll-šra ga-yə-šmar g ámkan-nnəs*
 put down-3MSObj COMP every-thing IRR-3MS-be in place-3MSGen
 Put it down so everything will be in its place. (N2p35)

6.4.7 Pronominal object suffixes

In both Arabic and Berber, pronominal objects are typically marked as suffixes on prepositions (exceptions in Siwi include *bla* “without” and *i* “to, for”, which take full pronouns as objects.) For a couple of borrowed prepositions, including *msabb* “because of, for the sake of”, Siwi uses Arabic suffixes. See discussion under Nominal features.

6.5 Kwarandzyey

In contrast to Arabic and Berber, Songhay adpositions governing nouns are predominantly postpositions. Given the extent of Arabic and Berber influence on it, one might expect any historical changes in Kwarandzyey to have brought it closer to treating prepositions as the default for nouns as well as clauses. This appears to be true in several respects, but care must be taken to check whether these changes can plausibly be attributed to Arabic/Berber influence or not. Note that, in Kwarandzyey and more generally in Songhay, postpositions can take only nominal objects, whereas prepositions can take clausal ones, nominal ones, or both.

6.5.1 Kwarandzyey primary postpositions

Kwarandzyey has only four primary postpositions, all strictly requiring NP objects, two of them restricted to within noun phrases; all are retained from proto-Northern Songhay. This is a rather smaller inventory than its nearest relatives in Northern Songhay; Tadaksahak and Tasawaq have both retained seven (Christiansen-Bolli (2010:120), Kossmann ms (2003)). In Southern Songhay, there is no obligatory genitive particle, so no distinction between primary and secondary postpositions in our sense can be made; a numerical comparison would thus be misleading. However, as the table below shows, the distinctions lost in Kwarandzyey to give this small inventory are robust in mainstream as well as northern Songhay.

Table 67.

		Northern			Mainstream	
		Kwarandzyey	Tadaksahak	Tasawaq	Koyra Chiini	Koyraboro Senni
Dative “to”		<i>si</i>	<i>se</i>	<i>si</i>	<i>se</i>	<i>se / še</i>
Alignment “towards”			<i>kamba</i>	<i>kàmbá</i>	<i>tenje ~ tanje</i> “facing”	<i>tenje</i> “facing”
Locative “at”	Inanimate	<i>ka</i> (<i>tsa</i> for some speakers)	<i>ka</i>	<i>kíná</i>	<i>kuna / ra</i>	<i>ra ~ la</i>
	Human (<i>chez</i>)		<i>daw</i>	<i>dá(γò)</i> (esp. “towards”)	<i>doo</i> (“in vicinity of” w/ inan.)	<i>doo</i>
Superessive “on”			<i>be</i> (< <i>béena</i> “top”)	<i>gá</i>	<i>ga</i>	<i>ga; boŋ ~ bon</i> “upon”
Genitive “of”		<i>n</i>	<i>n</i>	<i>n</i>	Ø / <i>wane</i>	Ø / <i>wana ~ wane</i>
Classifying genitive “(consisting) of, made for”		<i>wani/wini</i>	<i>wani</i>	<i>wánè</i>		

6.5.1.1 Kwarandzyey adnominal postpositions

The question of external influence on the genitive system is problematic. The

distinction between *Possessed *n* Head and *Head Possessed *wánè*, though it has no clear counterpart in southern Songhay, is no Kwarandzyey innovation; it can clearly be reconstructed for proto-Northern Songhay, as confirmed by the data in Kossmann (2009).

Tilmatine (1996:180) suggests that the Northern Songhay construction with *n* is a remarkable hybrid, combining the Southern possessor - possessed order with the Berber *n* marker. The same suggestion is made by Wolff & Alidou (2001:551), with reference to Tasawaq. However, this hypothesis is implausible for a number of reasons. It would have been borrowed as a postpositional preceding the head despite in Berber being a preposition following the head, which cross-linguistically is rarely attested. Northern Songhay offers no other example of a prefix of any kind being borrowed as a suffix. One normally expects syntactic changes, whether spontaneous or under external influence, to exhibit continuity with at least one source - in other words, one normally expects a linking environment where the source and target constructions coincide. However, none appears to be possible here; the order is inconsistent with any variant of the genitive construction in any Berber language, while, for the borrowing idea to be feasible, the *n* must be absent from the language's Songhay ancestors. Similar errors are occasionally found in second language acquisition; Jackson (1981:200) cites Punjabi learners' errors such as “a shoe of a pair”, “some crisps of packets”, and “his hand of the fingers”, and I have heard “his door's house” from an Arab second language speaker of English (although, in contrast to the Northern Songhay case, the adposition in both situations is from the newly-learned Matrix Language and the order is borrowed.) It is conceivable that such errors could have come to be accepted as the new norm in the still little-understood process of Northern Songhay's formation – or even, not impossibly but decidedly less probably, that speakers fluent in both languages chose voluntarily to combine the two constructions. However, the existence of alternative etymologies not involving influence makes it impossible to consider this as any more than a rather uncertain possibility. Kossmann (2009) proposes two plausible Songhay-internal etymologies for it, the longer genitive marker **wánè* and the transitive perfect marker *na*; and a southern Songhay language under little if any Berber influence, the recently described Tondi Songway Kiini, spoken south of the Niger bend near Douentza,

sporadically shows examples of a linker *-ŋ-* in compounds, which could be attributed to a survival of this *n* as a proto-Songhay feature:

<i>kòysè-ŋ-kàmbúru</i> (“rear end-ŋ-buttock”)	buttock
<i>bàrà-ŋ-gànsí</i> (“horse-ŋ-fonio grain”)	grass sp. (Heath 2005b:13)

If Songhay is a member of Nilo-Saharan, as inconclusively proposed by Greenberg (1963a), then the hypothesis of Berber influence appears even less plausible: a genitive marker with *n* and possessed-possessor order is attested in several branches of Nilo-Saharan, and has been reconstructed for it by Ehret (2001:no. 91). In fact, such forms are even found worldwide across apparently unrelated families, such as Finnish, Turkish, German, or Japanese, meaning that simple coincidence cannot be ruled out. For all these reasons, I consider the *n* genitive most probably to be a Songhay-internal development, although Berber influence may have been a factor in its shortening to a single consonant.

A postnominal genitive is unprecedented in Songhay outside of Northern Songhay, and at first sight it looks reasonable to suppose that Kwarandzyey's usage of *wani/wini* reflects Berber or Arabic influence. But a more detailed examination suggests that the evidence is not compelling. *wani/wini* has two uses in Kwarandzyey. The first is shared with southern Songhay languages – use as an independent noun head to form absolute genitives, eg:

6.34	<i>nə-m-zəw-ts</i>	<i>nn</i>	<i>išni,</i>	<i>ʃa-m-zu-ts</i>	<i>ʃ-wan,</i>
	2S-IRR-take-hither	2SGen ovine,	1S-IRR-take-hither	1S-G2,	
	<i>a-ffjət</i>	<i>a-m-zu-ts</i>	<i>a-wani</i>		
	ABS-other	3S-IRR-take-hither	3S-G2		

You'd bring your sheep/goat, I'd bring mine, someone else would bring his.

(2007-12-30/17)

The relationship in such contexts need not be possession:

- 6.35 *bəşşəh ndza nə-nya həybbu tsəmətəts wani, a-b-dəwwəx*
 but if 2S-eat much “tametet” G2, 3S-IMPF-make dizzy

But if you eat the “tametet” ones too much [in context: eat the locusts that have fed off the “tametet”-plant], it makes you dizzy. (2007-12-06/AM)

In this usage, it cannot be replaced by *n*; *n* is exclusively adnominal, never referential or predicative.

The second is this “postnominal genitive” adnominal use. In this context, it follows the head noun and precedes the plural marker – unlike *n*-genitives (which precede the head noun) and adverbial adpositions (which follow the plural marker), but like adjectives and appositive nouns (see Adjectives chapter). Contrast:

- 6.36 *lǝxxǝd i-b-gwa ttşawir k^wara win=yu...*
 when 3P-IMPF-see pictures Kwara GEN=PL
 When they see the Kwara pictures... (2007-12-22/12)

with:

- 6.37 *ʕan tsə=yu baba=ka*
 1S.GEN brother=PL father=LOC
 my half-brothers through the father's side (N6p131)

Both its usage to form absolute genitives and its pre-plural marker position correspond to the behaviour of noun phrases in apposition, not to that of typical postpositional phrases. A tempting solution is to analyse *wani/wini* as a nominal which takes a bare complement, rather than as an adposition. There are no other known nominals that take a full NP as a bare complement, but there is one that, like *wani/wini*, marks pronominal complements with the subject prefix series rather than genitive:

- 6.38 *a-yamma / *an yamma*
 3S-mother / *3S.GEN mother

“his/her mother”

*a-wani / *an* *wani*

3S-G2 / * 3S.GEN G2

“his/hers”

Irrespective of the synchronic label to be attached, these facts have diachronic implications: they suggest that adnominal *wani/wini* was originally a noun phrase placed in apposition. Nouns meaning “property” or the like commonly grammaticalise to genitive markers (Heine & Kuteva 2002:245); Maghrebi Arabic (*m*)*taʃ* < *matāʃ*- “goods” has followed a similar route. This account of *wani/wini*'s syntactic development would thus be consistent with Arabic influence, although its naturalness makes the argument for influence weak. But this innovation's distribution indicates that it must have occurred in proto-Northern Songhay at least – and, whereas the evidence for early bilingual contact with Berber is fairly strong, there is no evidence for direct Arabic influence on proto-Northern Songhay on the scale needed to make a contact explanation of this plausible.

In Berber, *n* is found in all branches and, if it derives from a grammaticalised noun, must have done so at a stage earlier than proto-Berber; only Tuareg has developed a distinction between the usual genitive with *n* and an alternative construction with a demonstrative plus *n* (m. sg. *wa-n*, f. sg. *ta-n*, etc.) Eg (Kossmann 2009):

edir [*n* *ešik*]
base of tree
the/a base of a/the tree

edir *wa* [*nn* *ešik*]
base that.m of tree
the base of the tree; the/a base of a/the tree

This suggests a rather different scenario. Demonstrative plus *n* is also the way Tuareg

marks an absolute genitive, eg *wa-nnāk* (DemMSg-2SgGen) “yours” (Heath 2005a:260). NP *wani* having been established as the translation equivalent of *wa-n* NP – a process no doubt aided by phonetic similarity – the use of the former could then have been extended, as a calque of Tuareg, to adnominal genitives. However, given that this is absent from Berber varieties not in contact with Songhay, it is at least conceivable that the direction of influence ran the other way; and, whereas other Northern Songhay languages are heavily influenced by Tuareg, the evidence for Tuareg loanwords in Kwarandzyey is very weak. Moreover, while this is a historically plausible account of the construction's syntax, it is not clear that it can account for the semantics of the construction.

There are few if any noun phrases with *n* for which an adnominal equivalent with *wani/wini* will be rejected as absolutely ungrammatical, or vice versa. However, the usage of *wani/wini* within noun phrases is disfavoured for possession, while being strongly preferred for cases where the complement of *wani/wini* expresses the nature or purpose of the head:

- Material: *iyyəh, kǔzzu lab wini*
 6.40 yes, pot clay G2
 Yes, a clay pot (2008-01-19/08)
- Type: *ššədərt tšarəyts wini, a-b-zəbbəd ħar ššabun*
 6.41 plant “tareyt” G2 3S-IMPF-foam like soap
 The “tareyt”-plant, it foams up like soap. (2008-01-01/08)
- 6.42 *gung^wə k^wəra wini a-b-ħəy tsaff^warts k^wəraɣ*
 chicken village G2 3S-IMPF-bear egg white
 Local chickens [as opposed to the imported kind] bear white eggs. (2007-12-21/31)
- Content: *lǔxxūd i-b-gwa ttšawir k^wəra win=yu...*
 6.43 when 3P-IMPF-see pictures Kwara G2=PL

When they see the Kwara pictures... (2007-12-22/12)

- 6.44 *ləqruf ššrab win=yu*
 bottles drink G2=PL
 bottles for drink (N2p44) (could also be Purpose – explaining shards of broken glass left by French soldiers)

- Purpose: *dwa* *gung* *wani*
 6.45 medicine stomach G2
 stomach medicine (N5p210)

- 6.46 *ssəjjada* *gənga=i* *wan=yu*
 rug pray=VN/PL G2=PL
 prayer rugs (N5p210)

- 6.47 *xəmmaṛ* *lgaṭ* *wini*
 yeast sweet GEN
 yeast for sweets (N6p29)

In the terminology proposed by Chappell and McGregor (1989), as reported in Heine (1997:22), this usage of *wani* may be considered a genitive of classification, “whereby the dependent nominal indicates the type of entity that is being referred to by the head noun” (1989:28). As noted, most Berber languages have only one productive genitive construction, making this distinction irrelevant. Tuareg does distinguish two genitive constructions, as noted; but the semantic distinction, if any, has unfortunately not been well-documented, and there is in any case little linguistic evidence for Tuareg influence on Kwarandzyey. Comparison to Arabic again appears more promising.

Most varieties of Arabic, including all varieties of Algerian and Moroccan Arabic excluding Hassaniya, distinguish a “direct” genitive formed by juxtaposition from an “analytic” one with a particle, notably *taʕ* or *d(yal)*. As with Kwarandzyey *n* vs. *wani*, the two constructions can in most contexts be interchanged without affecting absolute

grammaticality judgements. However, by surveying all analytic genitives and some synthetic ones in a corpus of previously published dialect materials throughout the Arab world, Eksell Harning (1980) reaches important conclusions on the semantic difference between them in usage. In particular, her data (*ibid*:158ff) indicates that wherever the analytical genitive is well-established – including most of Morocco and Algeria – it is used for concrete possession and for classification, or in her terminology qualification: material, contents, characteristic quality, etc; she finds this to be part of the central semantics of the analytical genitive. Underscoring the relevance here, she reports that specifically in southwestern Morocco “the predominant type of [analytic] genitive seems to be the one denoting qualification” (*ibid*:137), although there too it is established for concrete possession, place, and partitive relations.

In view of Tabelbala's close historical ties to southern Morocco, this makes it rather tempting to conclude that the semantics of *wani* have been influenced by Arabic, whether or not Arabic influence has anything to do with the construction's emergence. However, even this appears problematic: while *wané*'s semantics in Tasawaq are unclear, in Tadaksahak too, spoken far to the south in Niger, *wáni* “only rarely marks a true possessive relationship. A more regular use of this form is to express ‘character of’ or ‘of material of’.” (Christiansen-Bolli 2010:126). There is no independent evidence for direct Arabic influence that deep, from a non-Hassaniya variety at that, on proto-northern Songhay or on Tadaksahak – and, while Songhay influence on southern Moroccan Arabic via slavery is not impossible, northern Songhay influence is unlikely in light of their small population. Failing that, the semantic similarity is best regarded as a subject for future typological research, possibly reflecting a cross-linguistic generalisation about the semantics of pre- and post-nominal genitives; compare English, where *'s* and *of* constructions are often interchangeable, but **London's pictures* is quite unacceptable as a replacement for *pictures of London*. Similarly, in Fur (Jakobi 1990:288) possessive genitives are prenominal while ones indicating purpose or content are postnominal.

6.5.1.2 Kwarandzyey adverbial postpositions

As shown in the table, two historically distinct adpositions, **ga* “on” and **kuna* (already shortened to *ka* in Tadaksahak and Tagdal) “in”, have merged phonetically to *ka*, which combines both their range of senses. (Original *ga* is still preserved in the secondary adposition *gaga* “beside” < **gere ga*, discussed below, which as a relic of its history cannot be followed by *ka*.) Thus:

6.48 *a-yyərdəh* *a-ka*
 3S-stamp 3S-LOC
 He stamped **on** it (truffles).

6.49 *nə-m-dza* *ssk^war əlka=ka*
 2S-IRR-put sugar cup=LOC
 You put sugar **in** the cup.

This merger, though irregular, cannot be directly attributed to contact; both Arabic and Berber consistently distinguish “in” from “on” (Arabic: Algerian *ʕla* vs. *fi*, Classical *ʕalā* vs. *fī*; Berber: Tashelhiyt *f* vs. *gi(g)*, Zenaga *oʔf* vs. *däg*), and *k* from *g* (throughout the Maghreb at least.)

Kwarandzyey (like English) has no special locative for humans; the noun *ga* “house” (+ locative *ka* as appropriate) is the commonest equivalent of other Songhay **dayo* “at (chez)”, originally “place”. This lack is unexpected – and again cannot be the result of contact – given that the surrounding Arabic and Berber languages do have “chez” prepositions (Algerian *ʕand*, Classical *ʕind-a*; Tashelhiyt *dar*; Zenaga *äʔr*.) **dayo* “at (chez)” transparently derives from the noun “place”, which has also been lost in Kwarandzyey but has a reflex in the word *dzüydzi* “there, where...” (cp. KC *doodi*) < **dayo* + the anaphoric demonstrative *dzi* < **di*; cf. Demonstratives. That makes it tempting to suppose that the adpositional use was independently innovated elsewhere in Songhay, but its ubiquity makes that unlikely.

The form **kàmbá* “towards”, to be derived from its homophone “hand” (presumably envisioned as pointing or gesturing in the appropriate direction), has been replaced in

Kwarandzyey by =*si*, as part of a broader contact-related extension of this postposition's semantics – see Motion and postpositions below.

6.5.1.3 Acquisition as an explanation

These two or three mergers clearly do not reflect calques or borrowing. However, one plausible factor contributing to these mergers could be second language acquisition. The socially dominant families of the town all claim Arab or Berber origin; there can be little doubt that at least some speakers, including many of the most socially prestigious ones, descend from second rather than first language learners of Kwarandzyey. Semantic overgeneralisation of adpositions by second language learners, as noted above, is a well-attested phenomenon in second language learning. A similar phenomenon might be expected in the prepositions, and in fact only one of Songhay's many prepositions has left traces in Kwarandzyey; but, as will be seen below, this is more than made up for by intensive borrowing of Arabic prepositions.

A potential objection to this account is that similar language shift is reported in the oral history of other Northern Songhay groups, especially Tadaksahak and Tagdal speakers, and yet, as seen, the others have retained significantly more postpositions. However, the two shift situations seem to have differed in an important respect. In Tabelbala, different families seem to have arrived and presumably adopted the language at different times spread from the 11th century to the 18th (Champault 1969:371), whereas for Tadaksahak and Tagdal a scenario of one-time collective language shift seems probable (Benítez-Torres 2009). The needs of daily communication alone are not sufficient motivation to explain why an entire nomadic tribe would change their language; we must assume that Songhay had significant prestige for them at the time, enhancing the importance of accurate imitation of the model. In Tabelbala's case, by contrast, later immigrants would have been learning the language solely for daily communication; a language used only at what early sources from 1447 onwards consistently describe as an impoverished minor oasis (Champault 1969:25) can scarcely have had much prestige. This might reduce the incentive to correct their own mistakes towards a normative form of the language.

6.5.1.4 Motion and postpositions

Possibly the most important change in the semantics of *si* and to a lesser extent *ka* is one that cannot be shown in the comparative grid above. As noted by eg Jackendoff (1983:162), the meaning of spatial adpositions includes (at least) two principal components, reflected as separable elements in languages such as Finnish or Chinese (Kracht 2002): place/location, corresponding to a point or region with no relevant internal structure; and path, with an internal structure including at least “source”, the starting point, and “goal”, the endpoint. Songhay spatial postpositions are in general path-neutral – Songhay encodes “source” and “goal” in the verb, not the postposition:

“[S]ince there are no explicitly allative or ablative postpositions ('to', 'from'), the locative is also freely combinable with verbs that force an allative or ablative reading. While many languages express such distinctions by adpositional oppositions, in Songhay languages they are expressed by verbs in combination with a single Loc postposition.” (Heath 1999:136)

Thus “in”, “into”, and “from in” are all expressed with *ra / kuna* in KC, and “on”, “onto”, and “off” by *ga*. Path-neutral adpositional systems are widespread in languages of the Sahel area; Frajzyngier (2002) notes this in a number of Chadic languages (and suggests that it may be reconstructible for proto-Chadic), and it appears to be common across Mande as well (Lüpke 2005:115). Songhay **kàmbá* “towards”, discussed previously, is probably not an exception to this rule (the etymology suggests that direction rather than motion is being indicated, although the Northern Songhay data available is not sufficient for certainty); the other locative postpositions of Northern Songhay obey it, eg in Tadaksahak (Christiansen-Bolli 2010:sec. 3.2.7.2):

in: *a=b-gorá* [*húgu ka*]
 3S-IMPF-sit tent **LOC**
 S/he sits **in** the tent.

into: [ayá=n baaʃi] a=yyéd [banguká].
 1S=GEN water.bag 3S=return well **LOC**
 My water bag fell **in** the well.

from: a=b-nín [téeyart ka]
 3S=IMPF-drink pot **LOC**
 S/he drinks **from/in** the pot.

In Arabic and Berber, by contrast, at least some adpositions are explicitly marked for path, and are normally obligatory even when the verb encodes the path as well.

Kwarandzyey is shifting to the latter model for the encoding of motion, giving it a whole range of possible adpositional meanings not encoded in other Songhay languages, and has filled them partly by extending existing postpositions. Compare the relevant Algerian Arabic and Kwarandzyey paradigms (although some speakers still allow *ka* in some of the functions listed for *mən* below):

Arabic: *Table 68.*

	+motion		-motion
	from	to	
possession	<i>l-</i>	<i>l-</i>	<i>ʕənd</i>
at (place)	<i>mən</i>	<i>l-</i>	<i>fi</i>
in (container)		<i>fi</i>	
on (surface)		<i>ʕla</i>	

Kwarandzyey: *Table 69.*

	+motion		-motion
	from	to	
possession	<i>_ si</i>	<i>_ si</i>	<i>_ si</i>
at (place)	<i>mən _</i>	<i>_ si</i>	<i>_ ka</i>
in (container)		<i>_ ka</i>	
on (surface)	<i>_ ka</i>		

Examples:

- from poss.: *ʕa-γxətʃ-(a)=a.s* *tsəlləs=ka*
 6.51 1S-steal-3S=3S.DAT darkness=LOC
 I stole it **off** him in the dark. (2007-12-06/AM)
- to poss.: *aʀ=fu* *a-nn(a)* *iʒwəy=f^w=si* *zga=fu*
 6.52 man=one 3S-give girl=one=DAT cloth=one
 A man gave a girl a cloth. (2007-12-26/2)
- poss.: *yu* *miyya* *bɑ=γəy.si*
 6.53 camel 100 EXIST=1Sg.DAT
 I have 100 camels. (N1p196)
- from at: *ləxx^wədʒ* *a-ddər mən* *adaɣu*
 6.54 when 3S-go **from** here
 When he has gone away **from** here... (2007-12-22/12)
- to at: *yə-hhur-ts* *k^wərə=si*
 6.55 1P-enter-hither Kwara=DAT
 We came **into** Kwara. (2008-01-30/09)
- from in: *mən* *məndʒ əgga* *n-b-zu* *həmu, mən* *kuzzu?*
 6.56 from where?PAST 2S-IMPF-take meat, **from** pot?
 Where were you taking the meat from, **from** the pot? (2007-12-06/AM)
- to in: *nə-m-dza* *ssk^wər əlkas=ka*
 6.56 2S-IRR-put sugar cup=LOC
 You put the sugar **in** the cup. (2007-12-22/12)
- from on: *tsik^wats* *i-b-qətt* *ifəw* *kung=ka*
 6.57 basket 3P-IMPF-cut leaf palm=LOC
 For a basket, they'd cut leaves **off** palm trees. (2007-12-30/17)

to on: *a-m-ɥa* *fərka=ka*
 6.58 3S-IRR-go up donkey=**LOC**
 He gets **on** a donkey. (2007-12-22/11)

The expression of possession and surface contact simply preserves the original situation, differing from Arabic only in two cells (“have” and “off”.) However, the expression of location at and in has been copied from Arabic. *mən* is an Arabic borrowing, resulting in a locative paradigm that, unlike anything reported in southern Songhay, mixes prepositions and postpositions. The extension of dative *si* to “to” – but not “into” – is calqued on the polysemy of Arabic *l-*. (Berber, by contrast, generally distinguishes dative from allative “to”, eg Tashelhiyt *i* vs. *s*, Middle Atlas *i* vs. *ɣər*.) The polysemy of *ka* for “at”, “in”, and “into” is in a sense retained, but its restriction to these three cells makes it correspond precisely to Arabic *fi* (apart from the “in”-“on” merger discussed above.)

The extension of *si* to the allative dates back more than a century, being attested in Cancel (1908):

<amtâ adra si>
ɥa-m-ɥa *aɖra=si*
 1S-IRR-go up mountain=**DAT**
 “Je gravis... un montagne.”
 I go up **to** the mountain. (*ibid*:346)

<Ar fou adri loued si n'd' aň oui>
ər=fu *a-dri* *lwad=si* *indz(a)an* *wəy*
 man=one 3S-go river=**DAT** COM 3S.GEN woman
 “Un homme était allé à la rivière avec sa femme.”
 A man went **to** the river with his wife. (*ibid*:343)

mən “from” is not attested in this fairly short source.

The usage of *ka* and *si* has also been affected by Arabic in less systematic ways. One such is the use of *ka* to mark the comparandum in comparatives, discussed in the Adjectives chapter.

6.5.2 Kwarandzyey secondary postpositions

Secondary postpositions in Kwarandzyey are essentially nouns referring to a spatial or temporal relative location, not specified for path role. As such, they are in principle an open class; while the commonest ones are listed below, there can be no guarantee of completeness. This also explains why they cannot be postposed to clausal complements – relative clauses in Kwarandzyey follow rather than precede their head – although in fact none of them (even the ones with temporal uses) are used with clausal complements at all, pre- or post-posed. In contrast to primary postpositions, which neither take other postpositions nor get connected to their object through them, secondary postpositions are connected to their object through genitive *n* and are usually followed by locative *si* / *ka*, used to express their path role or lack thereof. Eg:

6.59 *a-m-hur an əmməs=s a-m-tsku*
3S-IRR-enter 3SGen middle=DAT 3S-IRR-be caught

It (the bird) will go into the middle of it (the trap) and get caught. (2007-12-30/17)

6.60 *a-ba igadanən=γ=yu i-ba-ffəg dzəw n tsir=ka*
3S-EXIST walls=DEM=PL 3P-PF-bury earth GEN under=LOC

There are these walls buried under the earth. (2007-12-22/12)

6.61 *a-ggar-a şəddər n ifər=tsa*
3S-find-3S pail GEN inside=LOC

He found it inside the pail. (2007-12-16/02)

The one exception is *gaga* “beside”, historically **gere ga*, which is locative by default

and cannot combine with locative *ka*:

- 6.62 *nə-m-g^wq-ndz-i nən gaga*
 2S-IRR-sit-CAUS-3P 2S Gen beside
 You put them next to you. (2007-12-22/12)

vs:

- 6.63 *nə-m-g^wq-ndz-(a) ur=ka*
 2S-IRR-sit-CAUS-3S fire=LOC
 You put it on the fire. (2007-12-22/12)

Most if not all secondary postpositions can also occur “adverbially” with no complement and/or no following postposition in appropriate contexts:

- 6.64 *a-m-dza afu mu, a-m-dza afu bəndə.*
 3S-IRR-put one front 3S-IRR-put one behind
 He'd put one in front and one behind. (2007-12-30/17)

- 6.65 *a-yžid an bəndə*
 3S-be born 3S.GEN behind
 He was born after him. (2008-01-19/08)

All the basic secondary postpositions locating one place relative to another are inherited (Tadaksahak is omitted from this table for lack of data):

Table 70.

	Northern		Mainstream	
	Kwarandzyey	Tasawaq	Koyra Chiini	Koyraboro Senni
beside	<i>gaga</i>	<i>gé:rè, tásàgà</i> (< Berber)	<i>jere</i>	<i>jer-oo ga</i>
in front of, before	<i>mu</i> (= “face”)	<i>(mè n) gínà</i>	<i>jine</i>	<i>jine;</i> <i>jin-oo ga</i>

behind, after	<i>bənda</i>	<i>àláqqàm</i> (< Berber)	<i>banda</i>	<i>banda;</i> <i>band-aa ga;</i> <i>dum-aa ga</i>
above	<i>bini</i>	<i>bé:né</i>	<i>beene</i>	<i>boŋ beene</i>
under	<i>tsiri</i>	<i>sídáy</i>	<i>čire</i>	<i>čire</i>

Secondary postpositions locating a place relative to an enclosure or set of locations are less clearly described for other Songhay languages, and include Arabic and Berber loans:

Table 71.

among, between	<i>gama</i>	<i>gámà</i>	<i>game</i>	<i>gam-oo ra</i>
middle	<i>mməs</i>	<i>gáréégàrè</i>	<i>maasu</i>	
inside	<i>ufri / ifri</i>	<i>àmmás</i>		<i>gunde</i>
inside	<i>ldaxəl</i>			

mməs may well have been borrowed before Kwarandzyey split from its nearest relatives, but is restricted within Songhay to KC and Northern Songhay, and derives from pan-Berber *amməs* “middle”. *ufri/ifri*, meaning “inside” or “half”, derives from Western Berber **ifli*, cp. Zenaga *uf^hih* “part, moitié” (Taine-Cheikh 2008a) (the changes *l > r* in Kwarandzyey, and *l > l̥* after a voiceless stop in Zenaga, are both well-attested); this word in Zenaga is a noun with no documented prepositional use. *ldaxəl* “inside” is from Cl. Ar. *dāxil-* “inside”; it occurs widely in Maghrebi Arabic with the irregularly unassimilated *l-* article without a complement, but in Arabic when used with a complement it omits the article, whereas in Kwarandzyey it retains it irrespective. The *l-* could also be interpreted as reflecting Arabic *l-* “to”, but this preposition is readily used as a pure locative, suggesting that its form reflects a borrowing from the Arabic noun rather than from the Arabic preposition. In their source languages, needless to say, none of these are postpositions, and most do not even take complements; this suggests that these were borrowed simply as nouns and acquired their secondary postpositional usage within the language.

The above table lacks “outside”; “outside”, *ərrəg*, is also a borrowing, but seems only to

be used adverbially, with no attested (nor successfully elicited) postpositional usage.

ərɾəg (contrast Tasawaq *ɹáárá*, KC *terey*, KS *tarey*) is probably to be derived from Saharan Maghrebi Arabic *ər-ɾəgg* “open desert, hamada” (Prémare: “étendue de sol plat et dur”), although the Kwarandzyey word is stressed as a single word (*áɾɾəg* rather than Arabic *ərɾágg*.)

Kwarandzyey also has secondary postpositions locating a place relative to another place along an implied trajectory, such as *gayuna* “beyond”; since these fit into the demonstrative system, they are discussed above. Since this function is not well described for other Songhay languages, and the terms used appear not to be of Arabic or Berber origin, this will not be discussed further here.

6.5.3 Kwarandzyey prepositions

But it is in the prepositional inventory that the most extensive influence appears. Only two nominal prepositions have been retained from Songhay (and both from the same etymon at that, comitative/instrumental/conditional *nda*); all other attested prepositions are loanwords or calques:

Table 72.

	Kwarandzyey	Tadaksa hak	Tasawaq	KC	KS
Manner / conditional					
Instrumental (+perlative / ablative) (_ NP)	<i>ndza</i>	<i>ənda,</i> <i>əs-</i> <i>kábahar</i>	<i>ndá</i>		
Conditional “if” (_ CP)				<i>nda</i>	<i>nda</i>
Hypothetical “if” (_ CP)	<i>ma, ama</i> < Berber, eg Kabyle <i>ma</i>	<i>əndár</i>			

Accompaniment					
Comitative (_NP)	AGR ¹³ + <i>indza</i>	<i>ənda</i>	<i>ndá</i>	(S) <i>nda</i> , (_ <i>banda</i>)	(S) <i>nda</i> , (_ <i>banda</i>)
Privative “without” (_ NP / CP)	<i>bla</i> < Cl.Ar. <i>bi-lā</i>	<i>wala</i>	- (phrased as “in which is not...” etc.)	<i>bilaa</i> (_NP/CP)	<i>bilaa</i>
Delimitation					
“from” (_NP) “since” (_CP)	<i>mən</i> < Cl. Ar. <i>min</i>	?	?	<i>jaa</i>	<i>zaa</i>
“up to, until” (_NP/CP)	<i>mʕad</i> < Mor. Ar. <i>miʕad</i> “jusqu'à” (Prémare) < Cl. Ar. <i>mīʕād</i> (see below)	<i>har</i>	<i>hár</i>	<i>hal</i>	<i>hala</i>
“between” (_NP)	<i>bəyn</i> < Cl. Ar. <i>bayn-a</i>	?	(_ <i>gámà</i>)	(_ <i>game</i> , <i>jaa... hal...</i>)	(_ <i>gam-oo ra</i> , <i>zaa... hala...</i>)
“between” (_CP)	<i>ma-bəyn</i> < Cl. Ar. <i>mā bayn-a</i> “what is between”	?	?	(<i>jaa... hal...</i>)	(<i>zaa... hala...</i>)
Relative time					
before (_NP/CP)	<i>gəddam</i> < Cl. Ar. <i>quddām</i> - “in front of”	<i>tizzárt</i> (<		<i>hal</i> (_ CP)	<i>zaa</i> + negation (_CP)
before (_NP/CP)	<i>qbəl</i> < Cl. Ar. <i>qabl-a</i> “before”	Berber)	<i>kànin</i> (sic)		
after (_NP) (not attested	<i>baʕd</i> < Cl. Ar. <i>baʕd-a</i> “after”	<i>zamá</i> (_CP),		_ <i>banda</i> (NP)	_ <i>banda</i> (NP)

13 *indza* is preceded by a subject agreement marker agreeing in person and number with the person being accompanied, not the object of the preposition. Thus *ʕa-ddər ʕ-indza X* (1S-go 1S-with X) = “I went with X”.

with CP)		<i>dáffər</i> (_NP) (< Berber)			
as long as (_CP)	<i>madam</i> < Cl. Ar. <i>mā dām-a</i> “REL last-3SgPf”	?	?	?	?
Cause and purpose					
because (_CP) (not attested with NP)	(<i>ʕla</i>) <i>xatər</i> < M. Ar. < <i>ʕla</i> “on/for” + <i>xatər</i> < Cl. <i>xāṭir-</i> “idea”	<i>iddá, hé</i> <i>bé, hé</i> <i>ka</i>	<i>hóyò gá,</i> <i>tún gá</i>	<i>jaa, maa se,</i> <i>hay di kaa</i> <i>se, bara,</i> <i>paskə</i> (Fr.)	<i>zaa, zamaa</i>
because (_CP)	(<i>ʕla</i>) <i>ħəqqəš</i> < M. Ar. < <i>ʕla</i> “on/for” + <i>ħəqq</i> “right” + <i>aš</i> “what”				
in order to (_CP)	<i>ndzūr</i> (calque from Arabic, see below)	<i>har</i>	<i>hóyò gá</i>	<i>hal</i>	<i>hala</i>
Other					
Similitative “like” (_NP, _ <i>ndza</i> CP)	(<i>m</i>) <i>ħar</i> < MAr. <i>bħal</i> “like” < Cl. Ar. <i>bi-ħāl-</i> “in the condition of”	<i>inʒin</i>	<i>sàndá</i>	<i>sanda</i> (_NP/CP)	<i>sanda</i> (_NP/CP)
“depending on” (_NP)	(<i>ʕla</i>) <i>ħsab</i> < MAr. < Cl. <i>ʕalā</i> <i>ħisāb-</i> “on the account of”	?	?	[<i>nda</i> “with (according to) his means” - Heath 1998:197]	?

“(swearing by) (_NP)”	<i>ħəqq</i> < Cl. Ar. <i>ħaqq</i> - “right” (followed only by divine names and saints' names)	?	?	?	? [in Zarma <i>nda</i> – Peace Corps 2001]
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Most of these have straightforward etymologies; while the change of $b > m$ in $(m)ħar$ is irregular, that of $l > r$ is the usual rule elsewhere in the language, eg *sriri* “ululate” (cp. KC *čilili*), *amrər* “erg” (cp. Tashelhiyt *amlal*.) In fact, the absence of this change gives reason to suspect that *bla* “without” is borrowed afresh from Arabic rather than inherited from a possible Arabic loanword into proto-Songhay, as the KC and KS forms might suggest; however, there appears to be at least one Songhay word that has retained non-initial l (*qululu* “penis”, cp. Tasawaq *qòlòllyó* (Alidou 1988:7, appendix)), so this conclusion is not certain. In general, these Arabic loans probably took place without an Berber intermediary; of the cases above, only *qbəl*, *bla* and $(\zeta la)ħəqqaš$ (and not *bašd*, *gəddam*, *mən*, *bħal*, *bəyn*, *\zeta laxaṭər*, and *\zeta laħsab*) are found in Taifi's dictionary of Middle Atlas Tamazight, the nearest influential Berber variety.

As noted above, Maghrebi Arabic *bla* “without” attaches pronouns to a following *bi*- “with” rather than directly. Kwarandzyey *bla*, however, takes pronouns regularly, eg *bla-γəy* “without me”.

Of these prepositions, those which can take either clausal or nominal complements differ from the Maghrebi Arabic counterparts in taking bare clausal complements, whereas in Maghrebi Arabic they require complementisers. Thus *mən*:

Kd.: *mən* *\zeta a-kkədda-bbunu* *\zeta a-b-yəxdəm*

6.66 from 1S-small-tiny 1S-IMPf-work

I've been working ever since I was tiny. (2007-12-06/AM)

vs. Ar.: *mə-lli* *künt* *syir*
 from-REL be-PF.1S small.M

(Prémare: *m-əlli / mn əlli* “depuis que, puisque, lorsque”, eg *məlli mša ma ktəb lna* he hasn't written to us since he left.)

In Maghrebi Arabic, several of the prepositions above – *bla* “without” and *qbəl* “before” obligatorily, *qbəl* “before” optionally depending on dialect – take clauses introduced by *ma* or *la*, historically markers of negation. This peculiarity, reflecting the irrealis nature of the following clause, is not directly reflected in Kwarandzyey; but *bla* requires the following clause's main verb to have the irrealis marker *m*:

Kd: *a-m-ka bla a-m-nən-dza dzəw*
 6.67 3S-IRR-come without 3S-IRR-drink-CAUS earth
 He'll come without irrigating the land. (2008-01-01/08)

vs. Ar.: *y-ji bla ma yə-sqi l-lərd*
 3S.IMPF-come without C 3S-irrigate the-earth

(Prémare: *blä ma* “sans que”, eg *blä ma nšūfo* without (me) seeing him.)

Likewise, *qbəl* requires the negative polarity item “yet” to be inside the mood-aspect-negation complex of the main verb of the following clause:

Kd: *qbəl nə-kkūm-qš išni*
 6.68 before 2S-yet-slaughter ovine
 before slaughtering the sheep (2007-12-22/13)

vs. (**nə-kkūm-qš išni*)
 (*2S-yet-slaughter ovine)
 (*You yet slaughtered the sheep.)

Cp. Ar.: *qbəl ma tə-đbəḥ əl-kəbš*
 before C 2S.IMPF-slaughter the-ram

Prémare: *qbəl imūt / qbəl la imūt* before he dies

gəddam “before” is attested in Arabic only with nominal complements; neither Prémare nor Taine-Cheikh give examples of it with clausal complements (and even Google turns up nothing.) In Kwarandzyey it, like *qbəl*, licenses negative polarity items:

6.69 *ʕa-ggw-ana* *gəddam* *a-kūm-ədri*
 1S-see-3SEmph before 3S-yet-go
 I saw him before he went. (N1p136)

mħar “like” takes *ndza* “if” with clausal complements, as does its Maghrebi equivalent *bħal*. This preposition is not normally used in my dialect of Arabic, and it was feared that local examples might exhibit influence from Kwarandzyey, but Moroccan examples online confirm it:

Kd: *ndza ašara yəɣləb-ni, ħar ndza nn ləqran yəɣləb-ni*
 6.70 if barrier beat-2S like if 2S.GEN peers beat-2S
 If (making) a water-barrier beats you, it's as if your peers had beaten you. (2007-12-21/30)

vs. Ar.: <ila mamchitich l agadir w marrakech bhal ila machefti le bled>

ila ma-mši-ti-š l-A. u-M. bħal ila ma-šəf-ti lə-blad
 if NEG-go-2SgPF-NEG2 to-A. and-M. like if NEG-see-2SPF the-country
 If you haven't been to Agadir and Marrakech, it's as if you haven't seen the country. (Posted 2 Apr 2007 by “Soussihma9” at <http://www.moroccanmp3.com/modules.php?name=Forums&file=viewtopic&t=10726&highlight=>)

ħəqq “(swearing) by” is used in practice only with the Arabic word *ṛəbbi* “God” and rarely the names of saints such as *sidi ʕabbad* (themselves all from Arabic), so the level of its integration into Kwarandzyey is questionable.

“Where” (*dzũydz / aḍaḍz / gaγ*) and “when” (*gũndz / xũdz*) superficially seem to fit the definition above for prepositions, insofar as they can be seen as taking complements and form adverbials. However, they are better analysed as relative clauses, gapping location and time respectively in the subordinate clause. This analysis is required for “where” by the fact that it can fill locative argument roles, eg:

6.71 *baγ s-ba-bbəy gay i-ddər kũll*
 anyoneNEG-PF-know where 3S-go all
 No one knows where they went at all (2007-12-30/17)

6.72 *aḍa=dz əgga ššʕamba yəskũn*
 place=REL.ANA PAST Chaamba live
 The place where the Chaamba used to live (2007-12-06/AM)

It is likewise suggested for “when” by the final *-dz* (corresponding to *dzi*, the anaphoric demonstrative and relativiser.) As such, I will treat them separately.

Historically, *ndzũy* also derives from a relative construction, *ndza* “with (instr.)” + *uγ(u)*, the proximal demonstrative / relativiser. This is a calque on Algerian Arabic *b-aš* “in order to” < *b-* “with (instr.)” + *aš* “what?” (also used to form headless relatives). However, the original sense is no longer relevant, and the following clause contains no gap.

In contrast to the semantic coherence of the secondary postpositions, this inventory of primary prepositions appears fairly miscellaneous. But the very extensive borrowings from Arabic (and occasionally Berber) mask an interesting generalisation: the pan-Songhay forms that have been replaced by prepositions borrowed as prepositions were almost always themselves prepositional. Compare cases like:

6.73 *an tsabəʕ tsirəy ħar məzwəq*
 3SGen tail red like (bird sp.)

Its tail is red like a *mezwaq*-bird. (< M. Ar. *bħal*)

- 6.74 *mʕad an bibya n tsak^{wzzin}*
 up to 3SGen tomorrow GEN Asr prayer
 until afternoon the next day (< Ar. *ʕwd*, cp. Taznatit *al- mʕad*)

- 6.75 *mən an tsi=yu mʕad an bənyu*
 from 3SGen foot=PL up to 3SGen head
 from its feet to its head (< M. Ar. *mən* < Ar. *min*)

- 6.76 *nə-sb-gis-ana a-m-kan bla ʔazu*
 2S-NEG.IMPF-let-3S 3S-IRR-sleep without dinner
 Don't let him sleep without dinner. (< M. Ar. *bla* < Ar. *bi-lā*)

to Zarma (Tersis 1972:201-2):

à zùrú dàngá áày
 3S run like 1S
 He ran like me.

à nà kàmbè ñàá:jìn kàlá fátá rá fó:là rá
 3S PF+3S hand push in up to armpit LOC bag LOC
 He pushed his arm into the bag up to the armpit.

or Koyra Chiini:

jaa suba-suba har fitirow
 from morning until twilight
 from morning to dusk (KC, Heath 1999:395)

bilaa kupkup wala ndooso
 without machete or pick-axe

without a machete or a pick-axe (KC, Heath 1999:120)

The clearest exception to this general principle is *baʕd* “after”, for which inherited and borrowed morphemes compete. Contrast:

6.77	<i>u</i>	<i>baʕd</i>	<i>aʔa</i>	<i>a-rrəhha</i>	vs.	<i>a-yzid</i>	<i>aŋ</i>	<i>bəndə</i>
	and	after	pulley	3S-busy		3S-born	3SGen	behind
	“and after the pulley he got busy”					“he was born after him”		

However, even here the order has precedent, in that “after”, as seen, is placed before a clausal complement in other Northern Songhay languages.

Of two other apparent exceptions, one is illusory. Location is marked postpositionally in Songhay, but, as seen above, delimitation of an action in Songhay is accomplished prepositionally; the limits of the action being delimited can be defined spatially or temporally, with reference to a location or an event. Thus *mən* is not an exception to the generalisation; in its delimiting sense it corresponds to the preposition *zaa*, and in its ablative sense, it marks a function which is not normally performed by adpositions in Songhay, as discussed above.

bəyn, however, may be a partial exception. In Arabic it can serve both as a location marker and as a delimiter. In Kwarandzyey, this adposition is not often used (attempts to elicit it normally yield the secondary postposition *gama*), and when found it can often be seen as a delimiter, eg:

6.78	<i>bəyn</i>	<i>aḍra</i>	<i>ndz</i>	<i>amrər</i>
	between	mountain	and	erg

between the mountain and the erg (from a song about Tabelbala; said of Tabelbala, which could be seen as covering the space between the mountain to the erg (delimiter), or as lying within the space between them (location.))

6.79 *nə-m-kə* *ɣuna-* *bin* *ttsalyin=ɣ=yu,* *bin* *uɣ=yu*
 2S-IRR-hit whatsit between last.PL-DEM-PL between DEM=PL

You multiply whatchamacallit, [the distance] between these last ones, between these ones [the two rightmost stars of the Big Dipper, by seven, to get the angular distance to the North Star] (2007-12-21/33)

However, a clearcut non-delimiting usage is found in the following riddle, based on an Arabic equivalent and as such perhaps reflecting literal translation:

6.80 *tsuɣ* *a-b-hur* *bin* *iška* *ndza* *həmu?*
 what 3S-IMPF-enter between fingernail and flesh

What enters between the fingernail and the flesh? (N4p14; answer: a person who tries to make trouble between friends)

6.5.4 Adverbs of manner

All attested adverbs of manner in Kwarandzyey are based on Arabic; most derive from prepositional phrases, usually with the instrumental. At least one is a partial calque from Arabic: *ndza laḥqəɾ* “slowly, carefully” (lit. with mind), based on Algerian Arabic *b-l-ḥqəl*. Several are phrasal loans from Arabic: *bə-s-syasa* “slowly” (< with the slowness), *fī-s-saʿ* “quickly” (< in the hour – no longer easily analysable), *bə-l-qanun* “legally” (< with the law), *bə-l-ḥani* “deliberately” (< with the meaning). *mliḥ* “well” is a dialectal Arabic adjective (< good), and *lahillā* “quickly” a reduplicated noun (< God God). These tend to be placed sentence-finally, after the verb and any complements of it:

6.81 *nə-m-gʷəb-hən* *iri* *ɣer* *bəlqanun*
 2S-IRR-INCEPT-go out water only legally
 You start taking out water only legally. (2007-12-30/17)

6.5.5 Adpositions with heavy complements

Throughout Songhay, relative clauses and conjunctions follow the head. The principle of phrase integrity would lead one to expect a consistent placement of postpositions after the end of the full noun phrase, including any conjuncts or relative clauses. But in fact some variety is observed:

Table 73.

	Kwarandzy ey	Tadaksahak	Tasawaq	Koyra Chiini	Koyraboro Senni
Postposition with conjunct complement X & Y	X Po & Y	?	X Po & Y (<i>táábùl ín gámà ndá kùžээрà</i> “entre la table et la chaise”)	X & Y Po, eg <i>ay nda ni doo</i> “at my and your place”. But “conjunction of two postpositional phrases by <i>nda</i> “and” tends to be avoided.” (p. 121)	X & Y Po, eg <i>žin-ey nda haya-buun-aa še</i> “for the jinns and other things (Texts, p. 19), <i>arm-ey nda has-ey kul gam-ey ra</i> “in the midst of all his brothers and uncles” (Texts, p. 25)
Postposition with relative clause- containing complement (N' = noun phrase minus relative, M = relative marker, RC =	N' M Po RC	N' Po M RC (only example found is non- restrictive: <i>áy=n nana se s(a) [ay=n mán Amínata]</i> “to his mother, [whose name is Amina]”)	?	N' M RC Po / N' Po M RC (204), eg <i>alfaa di se [kaa gaara yene]</i> or <i>alfaa di [kaa gaara yene] se</i> “to the holy man [who blessed me]	N' M RC Po / N' Po M RC (255), eg <i>woy-ey še [kaŋ na ŋaa- hay-aa hina]</i> or <i>woy-ey [kaŋ na ŋaa- hay-aa hina]</i> <i>še</i> “to the

relative clause)					women [<u>who</u> cooked the food]”
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In at least two southern Songhay languages, postpositions in complex noun phrases may optionally be placed before rather than after the relative clause. Kwarandzyey has taken this tendency further, making this position obligatory rather than optional. It also differs in placing the relative marker before rather than after the external postposition, competing with the expected position of postpositions relativised on in the lower clause so that, if such a sentence is elicited, one must be deleted, as seen previously under Relative clauses:

- 6.82 *ʕa-zzaw-a ga=dz=si gga-ɣəy binu*
 1S-take.3S house=REL=DAT PAST-1S yesterday [missing: *ka* LOC]
 “I took it to the house I was [in] yesterday”

These facts might be ascribed to phonology: Kwarandzyey primary postpositions and relative/demonstrative markers have changed from standalone words (as they still are in southern Songhay) into clitic suffixes. But there is no intrinsic reason that such clitics should be restricted to nominal hosts – contrast English ‘s, for example. Both Kwarandzyey and Tasawaq have also come to place postpositions after the first NP of a conjunct rather than after the conjunct, an order not attested in grammars of southern Songhay, eg:

- 6.83 *iʃn=i=ka ndza yu=yu ndza fərka=yu*
 ovine=PL=LOC and camel=PL and donkey=PL
 “against ovines and camels and donkeys”

- 6.84 *nə-dr=a.s llut=ka wəlla nən tsi=yu?*
 2S-go=3SDat car=LOC or 2SGen foot=PL?
 “Did you go by car or on foot?” (N1p149)

It is possible to motivate both these changes as simplifying the parsing of the adpositional phrase. The noun phrase cannot be given its correct role in the sentence without the postposition; so the longer the distance from the head of the noun phrase to the postposition, the greater the burden parsing it places on the memory. Hawkins (1994:69) proposes a formalisation of this intuition: “the human parser prefers for linear orders that maximise the immediate constituent (IC) to non-immediate constituent ratio of a constituent recognition domain”, where the “immediate constituents” of the PP are the noun phrase and the postposition, and the “constituent recognition domain” (CRD) is the minimum set of contiguous words required to recognise the PP as such, starting from the last direct child of the NP in his terms (this would include the head noun, adjective, demonstrative/relative marker, or plural word, whichever comes last) and stopping at the postposition.

The number of ICs will always be 2 for a PP's CRD. If phrasal integrity is respected, then the number of non-ICs will be equal to the number of words in any relative clause following the head noun / adjective / demonstrative / relative marker of the NP. A similar analysis applies for conjunct objects of postpositions. The postposition takes scope over all the NPs in the conjunct, so the CRD has to start from the head noun / adjective / demonstrative / relative marker of the first NP, and all other members of the conjunct (along with any relative clause) will count as the non-ICs. Since relative clauses and conjuncts are both in principle unbounded, this will yield arbitrarily low IC-to-non-IC ratios. In this sense, the syntax of Songhay creates a conflict between phrasal integrity and parsing demands, which is more intense the longer the relative clause or conjunct is and which has no direct parallel in Arabic or Berber nominals. In Kwarandzyey, and probably the rest of Northern Songhay judging from the inadequate data above, NP grammar seems to have changed to favour ease of parsing over phrase integrity.

Insofar as this development can be motivated by universal parsing principles, there is no need to invoke contact. However, there are other ways in which this conflict could have been resolved – by placing relative clauses before the head, for example, or by conjoining PPs instead of NPs, or by preposing the postposition. Arabic/Berber

influence may still be useful in explaining why this particular solution won out. In Arabic or Berber equivalents, the preposition corresponding to Kwarandzyey's postposition would of course have come first: Prep X Rel, Prep X & Y. Each of these surface orders is potentially ambiguous between two possible analyses:

- Prep [X Rel] and [Prep X] Rel (with the relative as an afterthought)
- PreP [X & Y] and [PreP X] & [*e* Y], with ellipsis of a repeated preposition.

In a literal translation from Arabic or Berber, the latter analysis in each case would be tempting, particularly because it places fewer demands on short-term memory, and would yield the surface orders X Prep Rel and X PostP & Y respectively.

6.6 Adpositions in long-distance relations

Arabic differs from Songhay and Berber in its handling of long-distance relations mediated by adpositions. Throughout Arabic, gapping is never an option; relative clauses and topic-fronting feature prepositions in situ followed by resumptive pronouns, while in focus constructions (especially for WH-words) the whole adpositional phrase is fronted. In most Berber and Songhay languages, by contrast, gapping is used in both contexts, combined with fronting of the preposition to a position immediately after the fronted element (giving the superficial impression that it has become a postposition.)

6.6.1 Siwi

Siwi uses only the Arabic construction in this context, never the Berber ones. But the apparent contrast is undercut by examination of other eastern Berber languages, which – starting as far west as Ouargla – almost all feature the same construction (R = relative marker, P = preposition, RP = resumptive pronoun):

Table 74.

	<i>Relativisation (w/ prep)</i>	<i>WH-words (w/ prep)</i>
Algerian Arabic	R... P RP (<i>lli... fih</i> which... in it)	P Q ... (<i>ɣli-mən</i> on what?)
Tachelhiyt	R P ... (<i>lli f</i> which on) (174)	Q P ... (<i>ma-s</i> avec quoi) (183)

Figuig	R P ... (<i>taxyamt zzeg dd iffey</i>) (315ff)	Q P ... (<i>wi xef, wi ked</i> what on, who with?) (201)
Ouargla	R... P RP (<i>oudr'ar' i tsensefed sides</i>) (42)	P Q ... (<i>f matta</i> on what, <i>jaj mmatta</i> inside what?)
Sened	-	P Q ... (<i>s'mai</i> avec quoi?, <i>f mai</i> pourquoi?) (54)
Douiret	R... P RP (<i>illi... fill-as</i> which... on it) (217)	P Q ... (<i>f mata</i> on what?), but residues of Q P ... (<i>mayar</i> why?) (162)
Tamezret	R... P RP (<i>élli sissen-dīs âmân</i> an dem sie zu trinken pflegten) (Stumme, 36)	P Q ... (<i>i win</i> à qui) (http://www.atmazret.info/atmazret_info/D_Dialecte/D_Grammaire/D_Morphologie/D_Pronom/D_Pron_Interog/pb_pron_interog.html)
Nafusa	R... P RP (<i>éli... sī-s</i>) (129-130)	P Q ... (<i>sě mâi</i> con che cosa?, <i>dī mâi</i> in che cosa?) (115), but residues of Q P ... (<i>mâni?</i> dove?... <i>mānis?</i> o <i>sě mānis?</i> da dove?) (125)
Medieval Nafusa	R P ... (آ سَارَتْ اسْتَوَطُ الْجَنَّةِ < <i>a sārat a-s-tiwaṭ aljannat</i> >, translated as جَرَّةُ الْجَنَّةِ "ô sārat, par laquelle tu as atteint le Paradis") (30)	-
Awjila	R... P RP (<i>wi... id-sîn</i> con cui...) (79), (<i>ta... z-gān</i> da cui) (162)	P Q ... (<i>af dīwa</i> a che cosa?) (162)
Siwa	R... P RP (<i>wən... dīd-əs</i> who... with him)	P Q ... (<i>i-tta</i> for what?, <i>i-ma</i> to where?)

The “Arabic” type is quite widespread in eastern Berber – Ouargla, Nafusa, Sened, etc. However, the fact that all of these languages are spoken by small minorities in largely

Arabophone regions alone would be enough to raise suspicion, and in fact there is direct evidence that it is not original there; the medieval Nafusi material in Lewicki includes a “Berber-style” relative clause with the instrumental, not used in modern Nafusi, and traces of the Berber WH-word order are found in Nafusi and Douiret (highlighted in grey.) In any case the influence thus represents a calque on Arabic; but whether the influence took place collectively before eastern Berber's continuity was broken up by Arabic expansion or separately in each “island” of Berber, including Siwa, remains to be determined.

6.6.2 Kwarandzyey

In long-distance relations in Songhay, there is some variation from language to language, but typically, both pre- and post-positions get placed after the relative marker / focus. In Kwarandzyey, the behaviour of postpositions conforms to Songhay norms; but prepositions are placed before rather than after fronted elements, as in Arabic and unlike in Songhay or Berber.

The following table compares the grammar of adpositions across Kwarandzyey and the languages relevant to its history. Grey represents possible examples of Arabic influence. Secondary adpositions in general relativise the same way as other genitives, and hence are omitted. In the table below, R = Relative marker, V = resumptive pronoun, Pr = Preposition, Po = Postposition.

Table 75.

	<i>Arabic</i> (<i>Algerian</i>)	<i>Berber</i> (<i>Tashlhiyt</i>)	<i>Kwarandzyey</i>	<i>Songhay</i> (<i>Tadaksahak</i>)	<i>Songhay</i> (<i>Tasawaq</i>)	<i>Songhay</i> (<i>KC</i>)	<i>Songhay</i> (<i>KS</i>)
Relativisation (primary preposition)	R... Pr V (<i>lli... fi-h</i>)	R Pr ... (<i>lli f</i>) (174)	R... Pr V / Pr R ...	R Pr ... (<i>ayó nda</i>)	R [Adv] Pr ...	R... Pr (<i>kaa... nda t</i>) (192)	R Pr ... (<i>kan nda t</i>) (246)
Relativisation (primary)	n/a	n/a	R Po ...	R Po ... (<i>ayó se</i>)	R Po ...	R Po ... / (R... V	R Po ... (<i>kan se</i>)

postpositio n)						Po) (<i>kaa ra / kaa ... a ra</i>) (193)	(245)
Relativisati on (no relative marker)	Head ... Pr V	n/a	Head ... (Pr V V Po)	Head Po ... (<i>táŋgud se</i>)	Head Po ...	n/a	
WH-words (prep)	Pr Q ... (<i>ʃli- mən</i>)	Q Pr ... (<i>ma-s</i>) (183)	Pr Q ... (<i>ndza tsuyu</i>)	? (in focus: Q Pr ...)	Pr Q ... (<i>ndá máý</i>)	Q... Pr (<i>mise foo... nda t</i>) (181)	Q Pr ... (<i>čín nda...</i>) (236)
WH-words (postp)	n/a		Q Po ... (<i>tsuy si</i>)	Q Po... (<i>ci be</i>)	Q Po ... (<i>máý si</i>)	Q Po... (<i>mey se ...</i>) (177)	Q Po... (<i>mey se ...</i>) (229)

The most surprising feature is the treatment of WH-word complements of prepositions, for which Berber, Tadakshak, and most Southern Songhay align together against Arabic, Kwarandzyey, and Tasawaq. This may just represent analogical simplification. For postpositions, the same surface order is compatible with two different analyses: Q [P [...]], where the question word is fronted and then the gapped adposition is fronted within the remaining clause, or [Q P] [...], where the question word is fronted together with its adposition. Since Songhay contains far more postpositions than prepositions, there are many opportunities for a speaker to adopt the second analysis, and having done so to extend it to prepositions, where the two analyses lead to different word orders, respectively Q P ... and P Q ... However, while the Arabic influence on Tasawaq is scarcely comparable to that on Kwarandzyey, it is deeper than for any other Songhay language, accounting for a wide range of direct loanwords including the numbers above 4 (Alidou 1988:6 appendix). The fact that this change, whether internally motivated or not, took place only in the two Songhay languages most heavily influenced by Arabic makes it conceivable that Arabic influence could have played a role. In any case, within Kwarandzyey this strategy has also been extended to relative clauses, where it seems to

be paralleled neither elsewhere in Songhay nor within Arabic.

The alternative treatment of prepositions in Kwarandzyey – using a resumptive pronoun – precisely parallels the Arabic method, and impressionistically appears to be a recent feature found more often in elicited sentences than in natural data; Arabic influence appears to be an obvious explanation there.

6.7 Theta role marking

In both languages under discussion, only a limited number of primary adpositions may mark obligatory arguments of a verb. Subject and direct objects take no adpositional marking. Indirect objects in both languages are marked with inherited primary adpositions, Siwi prepositional *i* and Kwarandzyey postpositional *si*. The Arabic loanverb *səlləm* “greet” (identical in both languages) takes the equivalent of “on”, respectively *af* and *ka*. In Kwarandzyey, “put” consistently marks its Location argument with *ka*; in Siwi, as in English, the choice of adposition depends on the circumstances. In no case was any verb observed to subcategorise for an argument obligatorily marked by an Arabic loan adposition. Some kinship terms in each language, such as “father”, are obligatorily possessed, and can be said to subcategorise for their possessors; but genitive adpositions, as discussed, are inherited. However, the influence of calquing is clearly observable, particularly in motion verbs (as already discussed.)

6.8 Conclusions

The semantic distribution of primary vs. secondary adpositions is remarkably similar in both languages. Adpositions with little semantic content primarily used for marking grammatical functions or taking clausal complements are consistently primary adpositions; ones with significant semantic content primarily used for marking spatial relations, that can be taken as referring to areas of space defined relative to their complement, are usually secondary adpositions.

The complement position of borrowed adpositions in Kwarandzyey depends crucially on whether the adpositions are borrowed as primary or secondary. Prepositions borrowed as primary consistently obey Moravcsik's generalisation that the source language order relative to the head is retained; and it is not clear that that generalisation was intended to apply to secondary adpositions, for which the order is determined by the linker. Myers-Scotton's apparently contradictory predictions are also borne out, not just for Kwarandzyey but for Siwi as well: the position of the adposition and what kind of linker, if any, it takes consistently fit the existing system of the host language in both cases. On the other hand, Myers-Scotton's generalisation is simply inapplicable to an important arena of Arabic influence on Kwarandzyey – the newly developed system of Path marking, not previously marked by the Matrix Language. These two adpositions' location can be predicted from their etymologies, consistent with Moravcsik's generalisation, but not from their semantics alone. Likewise, no simple Songhay equivalent of borrowed prepositions such as *flaḥsab* “depending on” has been noted – but, as Moravcsik predicts, they appear where they would in Arabic. Linking these two predictions together yields a more insightful description of what is happening: in this case, adpositions are borrowed in such a way that, at least with their minimal argument structure, they obey both the source language and the borrower language's rules, and adpositions for which those conflict are typically not borrowed.

In both languages, there are conspicuous differences in the permeability to borrowings of different types of adposition. Theta-marking adpositions seem to be exclusively inherited, in accordance with Myers-Scotton's predictions (although Arabic influence on their distribution can be observed.) Prepositions taking CP complements, by contrast, are mostly borrowed from Arabic in both languages.

The syntax of adpositions in relative clauses is another matter. In Siwi, it appears to derive entirely from Arabic sources. In Kwarandzyey, a number of features suggest Arabic influence, but for only one – the relatively marginal option of handling the objects of prepositions with a resumptive pronoun – does this appear certain. None of the predictions examined above lead us to expect Siwi's wholesale calque of Arabic relativisation strategies here, nor do they explain why it should be more receptive to

them than Kwarandzyey; these facts, however, fit into the broader picture seen in ch. 5.

7 Verbs and predication

Verbal derivation is comparatively easily borrowed, as illustrated in English by the productivity of Latinate affixes such as *re-* or *-ise*; the parallel borrowing of derivationally related pairs of verbs provides a natural way in for derivational morphemes. Verbal subject inflection, notoriously difficult to borrow, has been discussed under Nominal features. Tense-Aspect-Mood inflection is rather often calqued (Heine & Kuteva 2005) but seems less likely to be borrowed, perhaps because of its tendency to interact with subject inflection or verb stem choice. There are well-attested examples of the borrowing of negation markers, eg Ghomara Berber *ma* from Moroccan Arabic (Colin 1929) or Neo-Aramaic *ču* from Kurdish (Lipiński 1997:464); negation strategies may also be calqued. Nominal, locative, and existential predication markers are fairly rarely borrowed, but examples of calquing are found, not least elsewhere in Berber (see below.) The order of verbal arguments is well-known to be susceptible to external influence; familiar examples include the SOV order of Afghan Arabic (Ingham 2005) and Amharic, replacing original VSO.

7.1 Causatives and passives

In Classical Arabic, two causatives are found, *'a-CCaC* and *CaC:aC*; the former has vanished in most Arabic dialects, and the latter has become all the more productive in turn. The Classical passive with internal vowel change *CuCiC-* has survived only in a small minority of Bedouin dialects; elsewhere, reflexes of the Classical mediopassive with the prefix *in-*, or of an alternative passive **it-*, are found.

Berber has retained the northern Afro-Asiatic causative prefix *s-*, a passive marker *tt-* (with longer variants, eg *ttwa-*, *ttya-*), and a primarily reciprocal marker *m-* which is almost everywhere occasionally, and in some varieties consistently, used to form passives (Kossmann 2007a). Sporadically a passive prefix *n-* appears, which Chaker (1995:277) derives from dissimilation of *m-* before roots containing a labial. Many verbs are valency-neutral, appearing as intransitives with a theme as subject or as transitives; for Kabyle, Chaker (1983:300) counts some 250 valency-neutral verbs.

Across Songhay, four voice strategies are found: valency-neutrality, causative suffix, passive suffix, and unspecified object suffix. In KC, KS, TSK, Zarma (Sibomana 2008:83), and Tadaksahak (Christiansen-Bolli 2010:54), many verbs are valency-neutral, as in Berber. More common in southern Songhay, though often unproductive in northern Songhay, are causatives through suffixation. In Eastern Songhay, these use an affix **-ándì* (KS *-andi*, Zarma *'ándì*, TSK *'àn*, Dendi *-áni*); in Northern Songhay, these reflect a form homophonous with the instrumental preposition: Tasawaq *-ndá*, Tagdal *-nda* in *kanda* “make fall” (Benítez-Torres 2009), while the western Songhay form *-ndi* falls between the two. It is not clear which is original; **-ándì* / *-ndi* may be suspected of being an early loan, given its obvious similarity to Soninke and Manding *-ndi* (Creissels 1981), while **-ndá* could reflect reshaping of the causative based on the instrumental – compare the Hausa causative/efferential in *dà*, homophonous with the instrumental and treated as an independent particle in standard varieties but as a verbal suffix in western ones (Jaggar 2001:251). The passive suffix (KC *-ndi*, KS *-andi*, TSK *-ándì*) and unspecified object suffix (KS *-a*, HS *-à*) have limited distributions and have no reported reflexes in Northern Songhay. In Tadaksahak and Tagdal, the only productive diathesis morphemes are Berber loans (Christiansen & Christiansen 2002; Benítez-Torres 2009).

7.1.1 Causatives and passives in Siwi

The productive direct causative in Siwi, as elsewhere in Berber, is formed with the prefix *sə-*, eg *sə-zwər* “enlarge” < *zwər* “get big” < *azuwwar* “big”, *s-dəs* “make laugh” < *dəs* “laugh” (N3p74), *sə-njəf* “marry (s.o. to s.o.)” < *njəf* “marry” (2008-04-27/231). There are some irregularities, eg *s-ugəz* “put down, write” < *ggəz* “go down” (N3p17), and suppletion, eg *s-kən* “show” vs. *zər* “see”. This prefix is highly productive with non-agentive verbs, including Arabic ones: *sə-twəl* “lengthen” < *aṭwil* “long” < Cl. Ar. *ṭawīl-* (2008-04-27/231), *sə-ḥla* “make sweet” < *ḥla* “be/become sweet” < Cl. Ar. *ḥalā* (N1p261), *səḥma* “make hot” < *ḥma* “become hot” < *ḥami* < Cl. Ar. *ḥāmi-* (N1p220), *sə-njəḥ* “support, make win” < *njəḥ* “win, succeed” < Cl. Ar. *najaḥ-*, *sə-γləṭ* “cause to make mistakes” < *γləṭ* “make mistakes” < Cl. Ar. *γalaṭ-* (N2p75). Its productivity with agentive verbs is rather limited: **s-nəγ* “cause to kill”, **sə-zzəl* “cause to run” were

rejected, for example (N2p121).

There are very few clear-cut examples of Arabic non-causative – causative pairs being borrowed, and the morphology of Siwi militates against it: the borrowing of such a pair creates systematic ambiguity between the “perfect” causative and the “intensive” non-causative (see 7.3.1.) A couple of examples have nonetheless been elicited, notably *γəḏḏəb* “make angry” (int. *γəḏḏəb*) < *γḏəb* “get angry” (N3p75, 2010-01-14).

As elsewhere in Berber, there are many ambitransitive verbs for which it is possible to leave the subject unexpressed and promote the object to subject position without adding any morphology, leading to alternations like:

7.1 *lá* *ɾz-í-x* *šrá*
 NEG **break-PT-1S** anything
 I didn't **break** anything. (2009-06-22/a)

vs.

7.2 *tibátwen wən* *dí-lla* *g əssənduq* *ənnú:ba* **ge-y-əɾz-ən**
 egg.PL M/P.REL M-be at in box all **IRR-3-break-P**
 The eggs in the box will all **break**. (2009-06-17/a)

Perhaps as a result of generalisation of this, there is no reflex of the pan-Berber passive marker *tt-*. There is, however, a passive-like anticausative prefix: *ən-* (*na-* before *ʕ-*.) This lexically restricted prefix forms intransitive verbs describing a process affecting a human subject without regard to his/her will or physically changing a non-human one; in either case, the subject is assigned the role of experiencer or theme, and there is no implication of an external causer for the event. If a corresponding verb without the prefix exists, its object is by default the subject of the verb with *ən-*; however, at least in several cases, the corresponding verb can also occur as an intransitive with the object promoted to subject. Most verbs with *ən-* are Arabic loans:

Table 76.

Feelings:

əndrah “be worked up” (N2p267) < *drah* “make worked up” (2008-08-03); Cl.

darah- “be bold, daring”

ənhūr (*af*) “feel resentment (of)” < *hūr* “cause resentment” (N1p254, 2008-08-03/246); probably metaphorical extension from Cl. *ħarr-* “be/become hot”

ənbsət “be happy” (N2p153) < *bsət* “make happy” (2010-01-14); Cl. *in-basət-*
ənstəl “be stoned (intoxicated)” < *səl* “make stoned” (N2p221); Eg. *satal-* > *in-satal-*

ənhzaq “be in a hurry to go to the toilet” (N2p153); Cl. *in-ħazaq-* “become drawn together” < *ħazaq-* “squeeze, compress”

Limitations on freedom:

ənðləm “be wronged” (2009-06-23/a) < *tləm* “wrong” (2008-08-03/242); Cl. *ðalam-*

ənqmu “be suppressed” < *qmu* “suppress” (N2p56); Cl. *qamaʕ-* > *in-qamaʕ*
ənsʔəl “be occupied, busy” (N2p66); Cl. *šaʔal-* “make busy”

Involuntary damaging motion:

ənkəbb “stumble” < *kəbb* “make stumble”; Cl. *kabā*

naʕtər “trip” (N2p244) < *tər* “trip up”; Cl. *ʕaθar-*

əncəlah “slip (intr.)” < *ələh* “slip, slide (tr.)” (N2p246); perhaps Cl. *jallaħ-* “to charge, come down upon”, *julāħ-* “a torrent that carries away everything in its course”

ənyraq “drown (intr.)” < *ʔraq* “dive” (N2p193); Cl./Eg. *ʔaraq-* > Eg. *in-ʔaraq-*

Damage to subject:

ənšləm “have one's [body part] split” < *šləm* “split s.o.'s [body part]” (N2p199); Cl. *šaram-* “split, rend” > *in-šaram-*

naʕma “go blind” (2008-08-03/246) < adj. *laʕmi* “blind”; Cl. *ʕəmə* “blind”

ənqətəm “be cut” < *qətəm* “cut” (N1p123, N1p115); Cl. *qaʕam-* “bite off, cut” (no *in-*form attested for this verb, but cp. *in-qaʕaʕ* “be cut”)

əmbzər “spill (intr.)” (N2p61) < *bzər* “spill (tr.)”; Cl. *bazar-* “sow (seeds)”

ənhraq “burn, get hot” (N3p5) < *ħraq* “burn” (N2p236); Cl./Eg. *ħaraq-* > Eg. *in-ħaraq-*

Some are rejected without *ən-* (2010-01-14):

ənyat “be annoyed” (2009-06-25/a), cp. *yiyyat* “annoy”; Cl. *γāḏ-* “anger”
ənzkam “have a cold”; cp. *əzzakma* “a cold” (N2p75); Cl. *zūkām-* “a cold”, Eg.
in-zakam- “have a cold”

However, this is also found with some inherited Berber roots; the four known all contain labials:

əknəf “be grilled” < *knəf* “grill” (N2p196); cp. Kabyle *əknəf* (Dallet 1982),
 Ghadames *əknəf* “rôtir” > *məknəf* “être rôti”
ənfɛy “be pierced” < *fɛy* “pierce” (N1p262); cp. Ahaggar Tuareg *fəḍəy* “pierce”
 (Foucauld 1951)
əfrəq “have holes (container for liquid)” < *frəq* “poke holes in (container for
 liquid)” (N1p262); cp. Kabyle *ffərkəkk* “se craqueler, se fendiller; s'ouvrir”
əflay “be split (wood)” < *flay* “split (wood)”; cp. Tamazight *fli* “split wood”
 (Laoust 1931:236)

The following pairs appear onomatopoeic in origin, cp. Algerian Arabic *bləq/čəbləq* “noise of splashing”:

ənb^wlək “fall, fall in (a well)” (N2p243) < *b^wlək* “throw into (a well)” (2008-08-
 03/246)
ənbəlaq “fall underwater” < *bləq* “drown, throw underwater” (N1p135, N2p13,
 N2p193)
əčbaq “get immersed” < *čbaq* “immerse” (2010-01-14)

Of unknown etymology, but unlikely to be Arabic, is:

ənqway “bang one's head (intr.)” < *qway* “bang one's head (tr.)” (2010-01-14)

Does this prefix derive from Arabic *in-*, or from Berber *m-/n-*? Laoust (1931:44) notes

both possibilities, without committing to either. *mm-* is the primary passive marker in Nafusi (Beguinet 1931:76ff), eg *mm-əny* “be killed”, *mm-əfk* “be given”, and is found in Ghadames, eg *m-əknəf* “être rôti” (Lanfry 1973); it has a passive value on some verbs (notably “eat”) in much of northern Berber, eg in Tarifit (Lafkioui 2007:171) and Ait Seghrouchen Tamazight (Bentolila 1981:393). More rarely, a passive prefix in *nn-/n-* is encountered, always side by side with the reciprocal/passive prefix *mm-/m-*; thus Tarifit *nn-/n-*, eg *rzəm* “ouvrir” > *nnərzəm* “être ouvert” (Lafkioui 2007:172); some 18 verbs (several of them Arabic loans) taking *nn-/nnu-/nni-* in Ait Seghrouchen Tamazight (Bentolila 1981:396), eg *dfš* “plier en deux” > *nndfš* “être plié, se plier”; and a few relicts in Figuig starting with *nn-* (Kossmann 1997:153). Kabyle (Vincennes & Dallet 1960:38) distinguishes between *ən-*, used only with Arabic loans (eg *dull* “humilier” > *əndəll* “être humilié”), and *nnə-*, used both with Arabic loans and with some Berber roots (eg *ərnū* “ajouter” > *nnərnū* “s'accroître”; cp. Ghadames *ərənəβ*). Where these are used with non-Arabic verbs, they can generally be attributed to dissimilation from roots with labials, as Chaker (1995:277) noted; and all four Berber words taking *ən-* in Siwi contain labials. However, explaining the Siwi prefix in terms of Berber alone remains problematic. In every variety examined, *n-/nn-* fills a syllable onset by default, which would be more typical for Siwi syllabic structure; why is the *n* in Siwi *ən-* required to fill a coda position? And why does this prefix appear more often on Arabic loans than on inherited Berber words?

The most plausible explanation appears to be double etymology. The Arabic loans were borrowed in derivational pairs, with and without *ən-* (apart from the ones which only have *ən-*); their *ən-* derives historically from Arabic *in-*. The Berber verbs originally took **nnə-*, by dissimilation of **mmə-* in words with labials; this prefix was reduced to *ən-* by conflation with the Arabic one. The result was a single prefix with a unified meaning but two different etymologies depending on the word it appears on.

7.1.2 Causatives and passives in Kwarandzyey

A wide range of verbs, as elsewhere in Songhay, may be used intransitively or transitively without any stem change. These include both inherited verbs, such as *nyā*

“be eaten, itch” or “eat”, *tən* “be full” or “fill”, and loans from Berber and Arabic, eg *yakən* “be dirty” or “make dirty” (N1p256), *yisrəḥ* “graze (intr.)” or “graze (a flock)”; zero-derived valency change may therefore be regarded as productive. No Arabic passive forms (in *t-/ən-*) are attested as borrowings (although forms with the prefix *t-* used non-passively, such as *tsmənna* “hope”, *tsgūmm^wūn* “make square seedbeds”, *tsqahwa* “make/have coffee/breakfast”, or even reciprocally, eg *tsfahəm* “understand one another” (N1p148) are attested); neither are any Berber passives.

The inherited causative suffix in Kwarandzyey, highly productive with non-agentive verbs and also used with a handful of transitive verbs, is the suffix *-ndza*, clearly cognate with other Northern Songhay **-ndá* as discussed above. It is homophonous with the instrumental preposition *ndza*, but cannot be separated from the direct object by pronominal clitics, demonstrating its suffixal status. It turns non-agentive intransitive verbs (including some of Arabic origin) into transitive verbs, as in cases like the following:

7.3 *n-bab-hnu-tsə-ndz(a)=a.ka* *gi*
 2S-PROG-go out-hither-CAUS=3S.Loc butter
 You get butter out of it. (2007-12-06/AM)

7.4 *b^wəndz=fu* *məssəx,* *yə-m-dəb-ndza=a.s* *zga=f=yu*
 stick=one thus 1P-IRR-wear-CAUS=3S.Dat cloth=one=PL
 A stick like this, we would clothe it with some clothes. (2007-12-28/33)

This suffix can be added to some Berber and Arabic loans, eg *fəd* “be thirsty” > *fəd-ndza* “make thirsty” (2008-01-01/05) < Berber *fad*, *tsəkk^wər* “be reconciled” > *tsəkk^wər-ndza* “reconcile (people to one another)” (N9p39), probably from Berber *dkl*; *yəγra* “be expensive” > *yəγra-ndza* “make expensive” (<MAr. *yə-γla*), *yərxəs* “be cheap” > *yərxəs-ndza* “make cheap” (<MAr. *yə-rxəs*).

However, most Arabic borrowings with causatives use Arabic causatives. A very common derivational pair in Kwarandzyey has an intransitive verb *(y)iC₁C₂X* with a

corresponding causative $C_1\partial C_2C_2X$ ($X=\partial C/a$), both Arabic borrowings, eg:

Table 77.

<i>yəkməl</i> “finish (intr.)”	<i>kəmməl</i> “finish (tr.)” (2008-01-09/04, 2007-11-15/05)
<i>yəmdə</i> “be sharp”	<i>məddə</i> “sharpen” (N9p35-6)
<i>yəxwa</i> “be empty”	<i>xəwwa</i> “empty (tr.)” (N6p173)
<i>yəfrəh</i> “happy”	<i>fəfrəh</i> “make happy” (N6p173)
<i>yəhbəl</i> “go crazy”	<i>həbbəl</i> “make crazy” (N9p32, 2007-12-22/11)
<i>išix</i> “melt (intr.)”	<i>šəyyəx</i> “melt (tr.)” (N7p23)
<i>yətfə</i> “turn off (intr.)”	<i>təffə</i> “turn off (tr.)”
<i>yənqa</i> “be clean”	<i>nəqqa</i> “clean” (N9p19)

I have encountered no case of this template's application to a word not of Arabic origin; no Songhay verbs are of the form $(y)iC_1C_2X$, and no Berber ones so far noted are intransitive. Nevertheless, as overwhelmingly the commonest causative for verbs of the appropriate form, it may be considered regular for them. It also, less productively, forms denominal verbs and ones based on expressions (all Arabic borrowings):

<i>smiyyəts</i> (=ma) “name”	<i>səmma</i> “name” (2007-12-06/AM)
<i>ʕid</i> “Eid”	<i>ʕəyyəd</i> “celebrate Eid”
<i>nəwəwəts</i> “flower” (N9p)	<i>nəwwə</i> “bloom”
<i>atsəy</i> “tea”	<i>təyya</i> “make tea”
<i>ləffwə</i> “steam (n.)”	<i>fəwwə</i> “steam (v.)” (N7p)
<i>ššda</i> “rust (n.)”	<i>šədda</i> “rust (v.)” (N7p)

əssalamu ʕalaykum “peace be upon you (greeting)” *səlləm* “greet”

bqa ʕla xir “stay in peace (bye)”

bəqqaʕlaxir “bid farewell”

(N9p36)

Unlike other northern Songhay languages, no clear-cut Berber causatives have been noted for Kwarandzyey.

7.2 Directional marking

Arabic has no grammaticalised system of marking the direction of an action. In most Berber languages, however, the clitics centripetal *d* “hither” and centrifugal *n* “thither” form a productive and central part of VP morphology, indicating (roughly speaking) the direction of an action relative to the speaker's point of reference; they occur outside the personal agreement markers and within the clitic complex, after direct and indirect object markers. Within southern Songhay, several languages have a centripetal marker (KC/KS *-kate*, Dendi *-kîté* (Heath 2001)); the Northern Songhay languages have reflexes both of this (Tasawaq *-kà/kàt/kàté*, Tadaksahak/Tagdal *-kat*, Kwarandzyey *-tsi*) and of a centrifugal marker along the lines of **nan* (Tasawaq *-nàn*, Tadaksahak *-(n)an*, Tagdal *-nan* (Benítez-Torres n.p.), Kwarandzyey *-nna*.) The former can be connected to widespread *kate* “bring”; the latter is perhaps cognate with KC/KS *naŋ* “leave alone”, as suggested by Christiansen-Bolli (2010:72), although both its development and its form suggest that calquing on Berber *-n* played a role in its history. Siwi has lost directional marking, bringing it closer to Arabic, while Kwarandzyey has retained the Northern Songhay system, itself probably reflecting Berber influence.

7.2.1 Survivals of directional marking in Siwi

When Laoust (1931) described Siwi, the directional marking system of Berber had already ceased to be productive; then as now, its traces can barely be seen in the irregular morphology of one verb, “come”, and the suffixes *-d/-n* on three defective imperative verbs. The only verb in which a historic directional clitic continues to remain separate from the root in certain contexts is “come”, whose conjugation divides up three ways: 1S and 2S have no *d* at all, 2P and 3P have a *d* separated from the verb root by the personal prefixes, and 3M/F and 1P have a final *d* in a position where it can be interpreted either as part of the root or as a suffix. Thus, in the perfect:

<i>Table 78.</i>	Sg	Pl
1	<i>us-i-x</i>	<i>n-usəd</i>
2	<i>us-i-ʔ</i>	<i>us-əm-d</i>
3M	<i>y-usəd</i>	<i>y-us-ən-d</i>
3F	<i>t-usəd</i>	

All forms with dative agreement suffixes, eg *g-usəd-m-asən* “you pl. will come to them” (N1p234), are formed regularly on the basis of a stem *usəd* (“intensive” *tasəd*), as is the infinitive *tizdi*. However, even in “come” the *d* is not productive: its presence or absence is determined simply by the agreement affixes, not by semantics. The *d* of *hed* “come!” and *aɣəd* “hand over!”, and the *n* of *axxən* “take!”, have all been completely incorporated into the root, as shown by their plural addressee forms *hed-wət*, *aɣəd-wət*, *axxən-wət* (N1p237, N1p245); they could be interpreted as suffixes by comparison to *ax* “take!”, but are completely unproductive. The loss of directional marking, of course, brings Siwi closer to an Arabic model: no known variety of Arabic has obligatory morphosyntactic directional marking, in the VP or otherwise. The same process has occurred elsewhere; in Zuara (Mitchell 2009:25), the affix has similarly been limited to “come” and “bring”.

7.2.2 Directional marking in Kwarandzyey

Kwarandzyey reflects the pan-Songhay centripetal marker **kate* as *-tsi*, and the pan-Northern Songhay centrifugal marker as *-nna*. Both are affixed directly to the stem of the verb, preceding any pronominal object suffixes as well as causative *-ndza* (unlike KS or KC, where causative *-ndi* precedes directional marking):

7.5 *a-ʔʕa-tə-ndza* *lkürs* *bin=si*
 3S-rise-**hither**-CAUS seat up=DAT
 She has raised the seat up. (2007-12-16/02)

-tsi, which never induces *i/u*-deletion on the verb to which it is attached, can be used with reference to physical motion towards the reference point:

7.6 *hibi-tsi!*move over-**hither**

Get over here! (2008-02-05/17)

7.7 *lūxxūd yə-yyər-tsi* *yə-m-kəmməl*when 1P-return-**hither** 1P-IRR-finishWhen we come **back**, we will finish. (2007-11-15/05)7.8 *xəşş a-m-təw* *ann-əbba* *ndza* *a-yəmma* *a-m-yər*

must 3S-IRR-arrive 3SGen-father and 3S-mother 3S-IRR-return

a-m-zu-ts-i *mʕad kʷaɾa* *aday* *i-m-ka* *i-indz-a*3S-IRR-take-**hither**-3P until Kwara here 3P-IRR-come 3P-with-3S

He should reach his mother and father then come back and bring them all the way to Kwara here, so they come with him. (2007-11-22/12)

The deictic centre can shift; apart from the speaker's location, it can instead be the location of a person being identified with by the speaker, such as the arbitrary “you” (= “one”) in the following example:

7.9 *xūd nə-ʔtu-tsi* *ndzən gə,* *nə-m-ɣuna...*when 2S-arrive-**hither** 2P.Genhouse, 2S-IRR-whatsit...

When you reach your house, you whatsit... (2007-12-22/11)

With actions performed in a single place, it implies that they are done at a distance from the reference point and followed by a return to it:

7.10 *əgga ʕa-b-dər* *ʕa-yndza* *ʕan* *ʕammi...*

PAST 1S-IMPF-go 1S-COM 1SGen pt.uncle...

yə-m-fya-tsi *yə-m-ka*1S-IRR-open-**hither** 1S-IRR-come

I used to go with my paternal uncle... We would irrigate and then come back.

(2007-12-22/11)

7.11 *ndza tsakk^{wa} n-ba-ttaz-tsi?*with who 2S-PF-dine-**hither?**

Who did you have dinner with (before coming back here)? (2009-02-05/17)

7.12 *tsaksi yə-m-dər yə-m-gəŋga-tsi*now 1P-IRR-go 1P-IRR-pray-**hither**

Now we will/should go pray (at the mosque, then come back). (2007-11-15/05)

Both of the previous usages are shared with other Songhay languages, for example Koyra Chiini (Heath 1999a:140). A third, more abstract usage has not been noted in available grammars of Songhay languages, although examples can be found in Tasawaq (cp. *hún-kàt* “sortir; pousser (herbe), se lever (soleil)” – Kossmann np), where Berber influence has been equally or more intense: *-tsi* is also used more generally with reference to actions bringing something formerly hidden into the speaker's experience:

7.13 *Imahdi ndza a-hnu-tsi iytsa yə-m-b^wən*Mahdi if 3S-go out-**hither** lo 1P-IRR-die

If the Mahdi came forth (turning from an idea into a manifest part of the speakers' world), we would die. (2007-12-11/24)

7.14 *əttɾəyya a-m-tʃa-tsi*Pleiades 3S-IRR-rise-**hither**

The Pleiades would rise (becoming visible; motion up, not towards the speaker) (2007-12-21/33)

7.15 *dzũydz=ts=á azənk^wəd a-yban-tsi*there.ANA=LOC=FOC gazelle 3S-appear-**hither**

That's where the gazelle appeared. (2008-02-05/17)

This usage has no reported southern Songhay precedents; however, it corresponds

exactly to one of the uses of *dd* in Ait Seghrouchen Tamazight. There, *dd* is used with verbs such as *γmy* “grow, shoot up” (example given: grain), *ddhr* “appear”, *nqqr / aly* “to rise (of celestial bodies)” to emphasise the subject's shift from invisibility to actuality (Bentolila 1969:II.94) Compare, in less well-described cases, the Tashelhiyt contrast between *illa unzar* (3MSg.be rain) “il pleut, il y a la pluie” and *illa-d unzar* (3MSg.be-hither rain) “il se met à pleuvoir” (El Mountassir 2000:140), and in Zenaga the obligatory usage of *-dāh* with *ǰuffā* “grow, shoot up” (Nicolas 1953:59). In light of such data, the widening of *-tsi*'s semantics seems likely to reflect Berber influence.

-nna, which induces *-i/u* deletion, refers to motion towards a reference point other than the currently active one:

7.16 *q-kkq-nna an ba=s əlbəlu*
 3S-kick-**away** 3SGen friend=DAT ball
 He kicked the ball to his friend. (2007-12-16/02)

7.17 *lǰxxǰdz ǰ-ba-ddər-nna likul=si y-ab-dər ǰar yan ts=i=ka*
 when 1S-PF-go-**away** school=DAT 1S-PROG-go just 1SGen foot=PL=LOC
 When I was going to school we used to go only by foot. (2007-12-22/11)

7.18 *əgg i-ba-dzu-**nn**-a, an ǰamm=i=ba-ddzu-**nn**-a*
 PAST 3P-PF-send-**away**-3S 3SGen uncle=3P=PF-send-**away**-3S
 They had sent him away, his uncles had sent him away (from their home, Tindouf, to Tabelbala, the speaker's location) (2007-12-22/11)

7.19 *lmuhimm səlləm-**nna** ndzən ǰq-k^wəy=y=ka*
 anyway greet-**away** 2PGen house-person=PL=LOC
 Anyway, send our greetings to your family (who are far away from here.) (2007-12-22/12)

It can also be used with stative verbs in reference to action at a location far from the current reference point:

- 7.20 *y-ab-dər* *y-ab-g^wq-**nn**a ləħmad=ka*
 1P-PROG-go 1P-PROG-stay-**away** hamada=LOC
 We used to go and stay **out** on the hamada. (2007-12-06/AM)

- 7.21 ...*wəlla* *nə-kkəs-**nn**a* *məsdi*
 ...or 2S-leave-**away** thus.ANA
 ...or leave it like as it was. (2008-01-01/08)

Such a usage is not described for Tadakshak (Christiansen-Bolli 2010:71), but is attested in Tagdal, eg *aḡa-keeni-nan tara kan* “je dormais en brousse” (Rueck & Niels Christiansen 1999:24). This is hard to derive from its probable Songhay source “leave alone”, but again precisely parallels Ait Seghrouchen Berber, where it is attested with verbs such as *dž* “leave (laisser)” and *qqim* “stay, remain” (Bentolila 1969:II.102), and Zenaga, eg *yaḡmä-**nn**äh* (3MS.stay-away) “(il) a tardé” (Taine-Cheikh 2008a:30).

Apart from semantic convergence, the form of *-nna* is etymologically problematic. There is no regular loss of final nasals in Kwarandzyey, nor gemination of initial ones; why then did **nan* become *-nna*? The answer probably lies in contact. The centrifugal clitic in Zenaga is *näh* (often shortened to *-ḡn*); in dropping the final *n*, Kwarandzyey brought its centrifugal suffix closer to a Berber model in general and a Zenaga one in particular (as seen in the Introduction, there is independent lexical evidence for contact with Zenaga.) *näh* has an allomorph *nnäh*, as in *yaḡmä-**nn**äh* above, perhaps accounting for the gemination in *-nna*. In this respect, *-nna* seems a good candidate for a double etymology; both its form and its meaning derive from Berber influence as well as northern Songhay inheritance.

7.3 Tense, mood and aspect

While the terminology of tense is unproblematic, that of aspect shows substantial differences from source to source. I will adopt Comrie's (1976) definitions of *perfective* as indicating a situation viewed as a whole, *imperfective* as indicating a situation viewed

with attention to its internal structure, and *perfect* as indicating the continuing relevance of a previous situation. These contrast with the traditional definition of *perfect* as completed action, and *imperfect* as action not completed. However, due to the importance of family-specific aspectual terminology for cross-reference, I will also mention traditional labels, placing them in quotation marks. The realis-irrealis distinction is also a matter of debate; for current purposes, it is convenient to define *realis* as referring to any predicate with an evaluable truth value at the reference time, and *irrealis* as any predicate lacking that.

Arabic (Comrie 1976:80) makes a three-way distinction, based on both stem forms and subject agreement markers, between relative past perfective (“perfect”), with vocalic ablaut and suffixed subject agreement markers; relative non-past imperfective (“imperfect”), with prefixed subject agreement markers and suffixed number/gender agreement markers; and imperative, distinguished from “imperfect” only by the absence of person-marking prefixes. Many dialects add further distinctions by allowing various particles to be prefixed to the “imperfect”; for example, Egyptian Arabic uses prefixes to distinguish between present, irrealis, and future (*b-*, *Ø-*, and *ħa-* respectively). Almost all dialects use the active participle to express a perfect, in Comrie's sense. Note that this system makes it impossible to express a past imperfective with a single verb form; this is usually accomplished by combining a “perfect” copula *kān* with a verb in the “imperfect” (both finite).

In general, northern Berber verbs distinguish three stem forms in the positive, usually labelled, following Basset (1929; 1952), “aorist”, “perfect”, and “habitual” / “intensive”. Tuareg further divides the “perfect” into “simple perfect” and “intensive perfect” (Prasse 1972:38) (Heath's “resultative” (2005a:305).) The “perfect” (realis perfective) describes a completed action or a state, and is not compatible with the declarative; it is the usual translation equivalent of the Arabic “perfect”. The “intensive” / “intensive imperfect” (imperfective) describes habitual, prolonged, or ongoing actions, and is normally compatible with the imperative. The “aorist” is normal for clauses expressing desires or purposes, is the default for imperatives, and is the primary form used for expressing the future. In some regions, it also tends to be

used as a consecutive form in narratives.

The “perfect” stem is formed from the irrealis stem primarily by simple ablaut of full vowels to *a*. The formation of the “intensive” from the irrealis stem is morphologically more complex, variously involving prefixation, gemination, vowel ablaut, or some combination of the three. Subject agreement markers distinguish imperative from declarative, but do not depend on aspect. Preverbal prefixes always exist at least for the “aorist”, and often for the “intensive” as well; the most widespread by far is *ad-*, combined with most usages of the “aorist”.

Songhay verbs are invariant; mood, aspect, and negation are marked using particles following the subject position (henceforth, following Heath, “MAN markers”). In Western and Northern Songhay, these are always preverbal; in Eastern Songhay, they can be separated from the verb by direct objects. The three categories consistently distinguished in southern Songhay are indicative perfective (unmarked except when directly between subject and object), indicative imperfective, and subjunctive (Heath 1999b; Heath 1999a; Heath 2005b; Heath 2007). A future particle, placed between the imperfective or non-finite marker and the verb, is also widely found, but still retains vestiges of its origins as a verb of motion (the KC and KS forms probably derive from **te*.) A presentative particle (eg KS *goo*) can replace the imperfective marker in KS and KC. Less widespread, more recent developments are also found, eg the future with *kaa* “come” in KS. KS and HS show an inadequately understood distinction between longer “strong” and plain indicative forms.

7.3.1 Siwi TAM

Tense, aspect, and mood morphology in Siwi is distributed across several parts of the verbal word. Only one relevant feature, imperative/non-imperative, affects agreement affix choice (see Nominal features.) The same two features are relevant to verb stem choice as in other Berber languages: realis (“perfect”) / irrealis (“aorist”), and perfective (“perfect” + “aorist”) / imperfective (“imperfect”). However, the “perfect” / “aorist” distinction has retreated considerably, and the lack of any requirement to mark aspect on

irrealis forms is somewhat unusual by Berber standards. In the imperative, unlike many Berber languages, there is no aspect distinction; only the “aorist” may be used in the positive imperative. For realis verbs, irrespective of aspect, a further affix may be added to the verb+pronominal arguments complex, indicating relevance to the reference time (see below); its only convincing cognate in Berber is in nearby Awjila. For irrealis non-imperative verbs, one of two preverbal prefixes must be added; their history is problematic. Adverbs with primarily TAM-related semantics are also found, including *maṛṛa* “once” (< Ar.), *amra/ama* “now”, *idəg* “just now, recently”, *ʕammal* progressive (< Ar.), *lubəh* “probably not” (N1p243), and are most often placed immediately before the verb; these will not be discussed further here.

The Berber and Classical Arabic “perfects” have almost identical usage; the difference between Berber and Classical Arabic primarily lies in the correspondence of the Arabic “imperfect” to two Berber categories, the “aorist” and “intensive”. Calquing might therefore be expected to lead to a merger of these two categories, while keeping the “perfect” distinct. On the other hand, Egyptian Arabic has created a three-way distinction within the Arabic “imperfect” by the use of preverbal particles: it distinguishes a marked future (*ha/ħa-*, Bahariya/Farafra *ʕan-* (Woidich & Behnstedt 1982)) and present imperfective (*b-*, oases *ʕam-* etc.) from an unmarked subjunctive/narrative present. This might lead us to expect the creation of a future vs. non-future distinction within the “aorist”. Neither expectation is borne out in general; such merger as is observed is normally between the “aorist” and “perfect” stems, in accordance with Berber-internal trends, while all three forms remain distinct at the word level. However, in the imperative precisely the expected merger is observed. One might also expect calquing or borrowing of specific preverbal particles from Arabic; the results there are equivocal at best. The non-borrowing of other TAM morphology from Arabic is unsurprising; whereas Siwi expresses TAM independently of subject agreement, Arabic TAM marking is inextricably bound up with the latter, so borrowing it would require extensive reworking of the agreement system.

7.3.1.1 Stem changes

Across Berber, “aorist”, “perfect”, and “imperfect” normally all have distinct stem forms. However, the distinction between “aorist” and “perfect” stems, originally marked by vocalic ablaut for practically all stem types (as in Tuareg), has receded in most Berber languages; the merger of formerly distinct short vowels has made the “aorist” and “perfect” stems of many verbs identical throughout northern Berber (this includes 40% of Kabyle verbs, according to Chaker (1983:124), and most Ait Seghrouchen Tamazight verbs, according to Bentolila (1981:120)). The trend has gone further in Siwi: whereas most northern Berber languages continue to distinguish the two in roots with stem-initial or medial full vowels, in Siwi and its closest relative El-Fogaha – and to a lesser extent in other eastern Berber languages, such as Awjila and Nafusi – such distinctions have been neutralised in favour of what used to be the perfect forms. As shown by Basset (1929), throughout most Berber languages initial and medial *a* alternates with *u* for most verbs, including the representative examples from the right-hand side of the table (where the asterisks indicate not reconstructions but abstractions from irrelevant consonant changes and the like); but in eastern Berber, we instead have cases like those shown on the left-hand side of the following table:

Table 79.

		Eastern Berber “perfect”	Eastern Berber “aorist”	N. Berber “perfect”	N. Berber “aorist”	Alternation shared by (according to Basset 1929):
come	Siwi	<i>(y-)usəd</i>	<i>(g-)usəd</i>	<i>*usa</i>	<i>*as</i>	Ahaggar, Izayan, Rif, Iznacen, Zkara, Snous, Rached, Senfita, Menacer, Chenoua, Messaoud, Kabylie, Aurès... (p. 68)
	El-Fogaha	<i>(y-)uséd</i>	<i>(a-y-)úsed</i>	<i>*usu</i>	<i>*as</i>	Wargla, Nefousa, Ghadamès (<i>ibid</i>)
	Awjila	<i>(y-)ušâd</i>	<i>(a-y-)ûš</i>			
	Nafusi	<i>(y-)us(-</i>	<i>(ad-d-y-)as</i>	<i>*us</i>	<i>*as</i>	Ait Seghrouchen

	(Beguilot 1942:62)	<i>əd</i>				(<i>ibid</i>)
steal (cp. Laoust 1937:57)	Siwi	<i>(y-)ukər</i>	<i>(g-)ukər</i>	<i>*ukər</i>	<i>*akər</i>	Ahaggar, Semlal, Ntifa, Seghrouchen, Izayan, Rif, Iznacen, Zkara, Chenoua, Salah, Kabylie, Aurès, Dj. Nefousa, Ghadamès (p. 48)
	El-Fogaha	<i>(y-)ukár</i>	<i>(a-y-)úker</i>			
	Awjila	<i>y-úker</i>	<i>áker / úker</i>			
die (N2p27, 81)	Siwi	<i>(yə-)mmu</i> <i>t</i>	<i>(ge-)mmut</i>	<i>*mmut</i>	<i>*mmət</i>	Ahaggar, Semlal, Ntifa, Izayan, Iznacen, Zkara, Snous, Metmata, Chenoua, Salah, Aurès, Sened (p. 126)
	El-Fogaha	<i>(ye-)mmû</i> <i>t</i>	<i>(a-ye-)mmût</i>			
	Awjila	<i>(i-)mmût</i>	<i>(a-i-)mmût</i>			
fill (N2p226)	Siwi	<i>(yə-)ččur</i>	<i>(ge-)ččur</i>	<i>*ččur</i> < <i>**tkur</i>	<i>*ččar</i> < <i>**tkar</i>	Rif, Zkara, Snous, Metmata, Chenoua, Salah, Kabylie, Aurès (p. 119)
	El-Fogaha	<i>i-kkâr</i> (tr.); <i>ye-kjkjûr</i> (intr.)	<i>a-yé-kkār</i> (tr.); (intr. unknown)			
	Awjila	(unknow n)	<i>etkér</i>			
	Nafusi	<i>(y-)eččûr</i>	<i>(ad-</i>			

	(Beguilot 1942:61)		<i>y-)eččûr</i>			
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This conspicuous simplification is unlikely to be linked even indirectly to Arabic influence, since it predates the separation of El-Fogaha and Siwi, and merely continues a trend already visible throughout northern Berber and especially conspicuous in other eastern Berber languages.

Siwi has taken the process even further than El-Fogaha, as illustrated by its abolishing of a few alternations involving final vowels, including the unproductive class whose aorist is usually reflected elsewhere in Berber as *iCi* and the much larger but loanword-dominated class of verbs ending in *-u*. For these classes of verbs, the “aorist” stem has replaced the “perfect”, rather than vice versa, confirming (if its absence in El-Fogaha were not sufficient) that we are dealing with a separate change. As will be seen below, Arabic *y*-final verbs are often borrowed into the *-u* class; since in Arabic these never end in *-u*, this can most naturally be explained by assuming that they were mostly borrowed before this simplification occurred.

Table 80.

		Eastern Berber “perfect”	Eastern Berber “aorist”	Northern Berber “perfect”	Northern Berber “aorist”	Alternation shared by:
say	Siwi	<i>(yũ)- m̄m̄^wa</i>	<i>(g-yũ)- m̄m̄^wa</i>	<i>*nna</i>	<i>*ini</i>	Widespread (p. 71)
	El- Fogaha	<i>(ye-)nnâ</i>	<i>(a-yé-)n</i>			
forget	Siwi	<i>(yə)-ttu</i>	<i>(ge)-ttu</i>	<i>*kta</i>	<i>*ktu</i>	Ahaggar (p. 75)
	El- Fogaha	<i>y-uttâ</i>	<i>(a- i-)wétt[u]</i>	<i>*kti</i>	<i>*kti</i>	Semlal, Izayan (<i>ibid.</i>)
begin (< Cl. Ar. <i>bada'</i> -, impf.	Siwi	<i>(yə)-bdu</i>	<i>(ge)-bdu</i>	<i>*bda</i>	<i>*bdu</i>	Semlal, Ntifa, Izayan, Kabylie, Aurès (p. 74)

- <i>bda'</i> -)						
	El-Fogaha	(<i>yé-</i>) <i>bdā</i>	(<i>a-yé-</i>) <i>bdu</i>	* <i>bda</i>	* <i>bda</i>	Seghrouchen, Rif, Iznacen, Metmata, Snous (<i>ibid.</i>)

The loss of the distinction for these verbs is recent enough to have taken place under Arabic influence, perhaps as a result of imperfect second language learners' acquisition; but this is still unlikely. For one thing, Arabic groups the functions of the “aorist” with its “imperfect”, not with its “perfect”; for another, the generalisation of *u* makes it less rather than more similar to Arabic.

After all these changes, Siwi has been left with a system where the perfect-aorist distinction survives only for a minimal subset of verbs, mainly of the form $C\partial C / \partial CC / VC$, whose cognates across Berber form perfects by adding a stem-final vowel (André Basset 1929:58). In them, the perfect form can now be reanalysed as the “aorist” stem plus an affix, rather than as internal change: eg *wən* “go up” > *y-un-a* “he went up”, *əčč* “eat” > *yə-čč-a*. The perfective (“perfect”) suffix, as throughout Berber for this verb class, depends on person: *-a* in the 3rd person singular and 1st person plural, *-i* in the 1st and 2nd person singular (usually > \emptyset if dative or object pronominal affixes follow), \emptyset in the 2nd and 3rd person plural.

All Berber languages use preverbal prefixes before non-imperative irrealis forms, except sometimes in consecutive clauses; the pan-Berber prefix is *a(d)*, whose *d* is widely elided. In Siwi, with the decay of the “aorist”-“perfect” stem distinction, the primary marker distinguishing the “aorist” from the “perfect” is now the presence of the functionally near-equivalent preverbal prefix *ga-* (although this can also precede the “intensive” – see below.) This prefix, like *ad-*, is placed directly before the complex of verb+subject agreement; before *u* or *yu*, the vowel and the *y* disappear (eg *g-usəd* “he will come”), while it tends to merge with a following *i-* or *yə-* to yield *ge-* or *gey-*. While this marker is not reported elsewhere in Berber – El-Fogaha and Awjila both have straightforward cognates of *a(d)-* – it is not found in any Arabic dialect of which I am aware, so it is best explained as an internal development.

A rare second prefix for “aorist” verbs, not previously recorded, also exists: the suggestative *da-*, used primarily for suggesting courses of action to third parties, often with a rhetorical implication of indifference to the scenario outlined (semantics discussed below.) The etymology of this prefix presents difficulty. One possibility worth considering is the Classical Arabic imperative *daf* “leave, let” (root *wdf*), sometimes used with a clausal complement. While this verb is not particularly widespread in modern dialects, its use in optative constructions is reported for Afghan Arabic, eg *daŕ-u tēqaḥ* “let him fall!” (Ingham 2005:33), and as a rare alternative (with a “somewhat archaic flavour”) in Najd, eg *daŕ-ih yinbaḥ* “let him bark!” (Ingham 1994:124), and in some Mesopotamian Arabic *qaltu*-dialects, a particle *da-* may be used to reinforce an imperative, including on 1st person plural forms (Jastrow 1978:310). However, no such construction is attested anywhere near Siwa, and the shortness of the form makes it difficult to place confidence in the connection. Siwi, unlike most Berber varieties of Algeria or Morocco, allows the preposition *d* “with” to be used as a conjunction “and, yet”; but, even if we suppose the development took place at a period when the irrealis marker was still *a(d)* in Siwi, the development “and”+irrealis > suggestative would be semantically problematic. Ghadames has a future marker *da* used after negation and in subordinate clauses (Lanfry 1973); but there too the exact pathway by which it got restricted to its current Siwi usage would be unclear. In the absence of further evidence, the etymology of *da-* must remain uncertain.

The “intensive” stem, unlike the “perfective”, continues to be consistently distinguished from the “aorist”. Notable “intensive”-forming strategies (often mutually complementary) include:

Table 81.

Change made	“Intensive” stem form	Eg	Cp. Ait Seghrouchen (Bentolila 1981):
<i>t-</i>	V- (ə)CC-	<i>ukəl</i> “walk” > <i>takəl</i> <i>əttəf</i> “seize” > <i>təttəf</i>	<i>adf</i> “enter” > <i>ttadf</i> <i>ttf</i> “seize” > <i>ttttf</i>
V ₁ > -a-	V ₁ = <i>i/u</i>	<i>sugəz</i> “write / put down” > <i>sagaz</i>	<i>daf</i> “defend” > <i>ttdaf</i>

		<i>iṛəw</i> “bear (child)” > <i>tarəw</i> (N2p157)	
$C_2 > C_2$:	$C_1əC_2$ $C_1C_2əC_3$	<i>ləs</i> “wear” > <i>ləss</i> <i>ktər</i> “bring” > <i>kəttər</i>	<i>rʒ</i> “break” > <i>rʒʒ</i> <i>bdr</i> “speak” > <i>bddr</i>
$V_2 > -a-$	$V_2 = ə$	<i>ləbləb</i> “blaze” > <i>ləblab</i> (N2p219)	<i>dgdg</i> “knock down” > <i>ttgdag</i>
$V_2 > -u-$	$V_2 = ʊ$ ($ʊ$ is an allophone of $ə$ next to rounded labials)	<i>nəddūm</i> (/nəddəm ^w /) “sleep” > <i>nəddum</i> (N2p255)	<i>bšbš</i> “murmur” > <i>ttbšbuš</i>
$-a$	$-VC$ ($V=a/i/u$)	<i>čur</i> “fill” > <i>čara</i> <i>fat</i> “yawn” > <i>tfata</i> (N3p23)	<i>lal</i> “be born” > <i>tlala</i>
$-u$	$-C$:	<i>llūkk</i> “get dirty” > <i>lūkku</i>	<i>llukk</i> “walk on” > <i>ttlukku</i>

There are also a number of synchronically irregular forms (eg *way* “buy” > *taɣ*) or unexpected combinations of these strategies (eg *rəf* “fear” > *tərraf*.) As illustrated by the Ait Seghrouchen comparisons, the “intensive”-forming strategies of Siwi all appear to be proto-Berber retentions, although Basset (1929) also includes a number of other strategies not so far observed in Siwi, such as *i*-infixation, suggesting some degree of simplification.

Borrowed verbs are adapted to the system; in no attested case do they distinguish the “aorist” from the “perfect”. For hollow (V-medial) verbs, the form they take seems to be based on an adoption of the Arabic (3rd person) perfective stem as the new Berber “aorist” / “perfect”, eg stems such as *šar* “happen” (Cl. Ar. *šār-*, impf. *-šīr-*), *ban* “appear” (Cl. Ar. *bān-*, impf. *-bīn-*). For vowel-final verbs, the final vowel is normally converted to *u* in both the perfective and the irrealis; these can be taken to have originally been based on the perfective form, and to reflect the fact that, as discussed above, until a comparatively late stage in Siwi's development, final *u* underwent ablaut to *a* in the perfect as in other Berber languages: eg *bnu* “build” (Cl. Ar. *banā*, impf. *-bnī-*), *bdu* “begin” (Cl. Ar. *bada'*, impf. *-bda'-*), *dɕu* “pray (ask God for something)” (Cl. Ar. *daɕā*, impf. *-dɕū-*), *rɕu* “agree” (N1p248), *ɕtu* “be free (have free time)”

(N2p172). However, some verbs, presumably more recent loans, keep *a*, eg *ħla* “be sweet” (2009-10-13) (Cl. Ar. *ħalā*, impf. *-ħlū-*), *yla* “be expensive” (N3p105) (Cl. Ar. *yalā*, impf. *-ylū-*), *šwa* “grill” (N2p235) (Cl. Ar. *šawā*, impf. *-šwī-*). An exceptional case is *dwi* “talk” (Cl. Ar. *dawwā* “make a noise”, impf. *-dawwī-*), where the retention of imperfective *i* presumably avoids a sequence of semivowel+corresponding full vowel. Examples like the following illustrate the persistence of Berber morphology with loan verbs:

Table 82.

	Classical Arabic (perfective)	irrealis/aorist = perfect(ive)	imperfect / intensive
burn intr. (N3p5)	<i>*in-ħaraq-</i>	<i>ənħrəq</i>	<i>tənħrəq</i>
get in trouble (N3p66)	<i>wāħil-</i> “fall into mud”	<i>uħəl</i>	<i>taħəl</i>
call prayer (N3p29)	<i>'aḏḏan-</i>	<i>əddən</i>	<i>təddən</i>
put (2008-05- 07/322)	<i>ħatṭ-</i>	<i>ħəṭṭ</i>	<i>ħətṭu</i>
build (2009-06- 17/a, 2009-06- 21/b, 2008-05- 07/322)	<i>banā</i>	<i>bnu</i>	<i>bənnu</i>
benefit (2008- 05-07/323)	<i>nafaḥ-</i>	<i>nfu</i>	<i>nəffu</i>
invite (N3p29)	<i>bayyat-</i> (taken as denominal verb from “house”)	<i>biyyət</i>	<i>biyyat</i>
use (N1p267)	<i>istaxdam-</i>	<i>stəxdəm</i>	<i>stəxdam</i>

So morphologically, despite some simplification, Siwi positive TAM stem inflection has remained devoid of direct Arabic influence.

7.3.1.1.1 Functions of the Siwi “aorist”

Apart from their use with negation (for which see below), the semantics of Siwi verb forms hew rather closely to the pan-Berber norm. The label that best summarises the functions of the “aorist” in Siwi is: irrealis perfective. It is used primarily for references to events without a truth value at the time of reference (by default the present, but otherwise set by context.) This includes absolute future time, irrespective of aspect:

7.22 *xəms-dgáyəg uxɾá ga-dul-ɣ-ak*
 five-minutes other **IRR-return-1S-2MDat**
 In five minutes **I will come back to you.** (2009-06-27/a)

7.23 *šəkk ga-bnu-ɥ ššhəɾ da-w-a kamil-a?*
 you **IRR-build-2S** month MOD-DEM.M-PROX whole-PF
 You're **going to build** for the whole month? (2009-12-31)

but also relative future time (whether or not the events described end up happening):

7.24 *yə-ffʷáy i lámʃaš qbəl niš ga-kim-ax i lxədmát*
 3M-go out to living before I **IRR-enter-1S** to work
 He went out to his job before **I got** into work. (2008-05-05/289)

finite complement clauses expressing a potential action that has not been realised, without any implication that it will be:

7.25 *xsí-x ga-skən-ɣ-áwən agbən-nnəw*
 show-1S **IRR-show-1S-2PDat** house-1SGen
 I want to show you my house. (2009-06-22/a)

7.26 *qádr-aɥ ga-ssy-aɥ wa-ya na a-θqil fəll-am?*
 able-2S **IRR-take-2S** M.DEM-PROX or M-heavy on-2F?
 Can you carry this, or is it too heavy for you? (2009-06-23/a)

for wishes (optatives):

- 7.27 *g-γə-ʕfu* *rābbi*
IRR-3M-have mercy God
 God **have mercy**. (2009-06-25/a)

conditions which have neither been fulfilled nor ruled out (without any implication that they will happen):

- 7.28 *ankānūm lá-ga-š-γ-áwən* *šrá ál* *ga-ktár-m-i* -
 2P NEG-IRR-give-1S-2PDat anything until **IRR-bring-2P-1SDat** -
 I will not give you anything until **you bring me**... (2008-08-03/250)

- 7.29 *kan gá-hh-aṭ* *i lmáγrəb s ályəm* *sg áššif da-w-ók*...
 if **IRR-go-2S** to Morocco INST camel from summer MOD-DEM-2:M
 If **you go** to Morocco by camel starting this summer... (said in spring 2008-05-05/289)

and “free choice” hypotheticals not referring to specific individuals/events:

- 7.30 *wənn* *ge-γ-áčč* *ləħrám* *lá-ga-γə-nfu-t*
 REL.M **IRR-3M-eat** forbidden NEG-IRR-3M-benefit-3MObj
 Whoever **eats** (ie: makes money from) what is religiously forbidden, it will not benefit him. (2008-04-27/234)

- 7.31 *amkán gá-hh-aṭ* *itádəm ájjət*
 place **IRR-go-2S** people one.F
 Wherever **you may go**, people are the same. (2009-06-27/a)

It also includes positive imperatives (but not negative ones, discussed below):

- 7.32 *úš-i* *tṭubát*
give-1SDat brick.SG
Give me a brick. (2009-06-23/a)

With the particle *da-* rather than *ga-*, the “aorist” remains irrealis, but yields a reading that might be labelled “suggestative”, indicating a possible course of action that a third party might consider. It is not an optative – although it can have an optative reading, it is often used to suggest, to the contrary, that whether or not the action is taken is irrelevant to the speaker:

- 7.33 *áf* *ntátət* *da-tə-γdāb,* *tá* *ga-šmər-š-as?*
 on she **SUGG-3F-anger,** what IRR-do-1S-3SDat
 على كيفها خليها تغضب، آش ندير لها؟
Let her get angry at her leisure – what would I do to her? (N1p45)

- 7.34 *dá-t-rah* *in* *ítadəm-ənnəs*
SUGG-3F-go to *chez* people-3SGen
 خليها تمشي لهلها
Let her go to her family's house! (N1p45)
 (Context of preceding 2 examples: a man was talking about taking a second wife, and I suggest his first wife might get angry.)

- 7.35 *da-i-zan-ən-t*
SUGG-3-divide-P-3MObj
Let them [Algeria and Morocco] **divide it!** (N2p85, corrected 2010-01-14)
 (Context: discussing how the Western Sahara issue leads to Algerian-Moroccan tensions)

- 7.36 *lahmu* *d-úsəd* *brayəh!*
 heat **SUGG.3M-come** as it wishes
Let the heat **come** if it likes! (N2p89)

- 7.37 *da-t-usəd,* *niš* *l-ug-i-ǧ-as*
SUGG-3F-come I NEG-prevent-PF-1S-3SDat
Let her come, I haven't stopped her. (N2p140, given as example)

The “aorist” is always preceded by either *ga-* or *da-* (for most verbs, this is in any case the only morphological indicator distinguishing it from the perfect.) In Moroccan Berber languages, the “aorist” may be used without a preverbal particle narratively for the continuation of events initially described with a “perfect” or “intensive”; as Leguil (1986a; 1986b) notes, Siwi does not have such a usage. However, as he also notes, neither Tuareg nor Kabyle allow this usage; so, even assuming this feature was found in proto-Berber, its loss in more easterly varieties could have taken place at a stage far earlier than the first contact with Arabic.

7.3.1.1.2 Functions of the Siwi “perfect”

The “perfect”, or realis perfective, is used for realis completed actions. For processes, this necessarily yields past time:

- 7.38 *ídəg* *síwl-ax* *d* *ám̄ma g* *áttalfun*
just now speak-1S with brother in telephone
I just spoke to my brother on the phone. (2008-05-04/258)

- 7.39 *bʃad* ***i-dúl-ən,*** *axxar-əllél* *ta* ***y-ǧamr-i:n?***
after **3-return-P** end of night what 3-do-P?
After they **came back**, at the end of the night, what **did** they **do**? (2008-08-03/246)

However, for non-processes, it is ambiguous between past and present time, with the latter as a default interpretation:

- 7.40 *niš* ***xs-ǐ-x*** *n* *i-ħəkkik-ən*
I **want-PT-1S** GEN PL-small-PL

Me, I **want** the small ones. (2008-08-03/242)

The “perfect” is also used for past conditionals (which, having already already acquired a truth value of false, are realis) and for counterfactual conclusions following from them:

7.41 *ləwkán* *γér* ***i-lul-n-i*** *g áşşin, kan* ***ləmd-áx-a*** *şşini*
 if[hypoth.] only **3-bear-3P-1SObj** in China then **learn-1S-PF** Chinese
 If I had been born in China, I would have learned Chinese. (2009-06-17/a)

7.3.1.1.3 Functions of the Siwi “intensive”

The “intensive” (imperfective) form is used for realis actions whose temporal extension is significant. In the absence of further context, the default reading is present ongoing:

7.42 ***i-kárrəb*** *tyát*
3M-drag.INT goat
 He is leading a goat (said while watching a man lead a goat, on film) (2009-06-21/b)

7.43 ***i-sájjal?*** *áma* ***i-sájjal?***
3M-record.INT now **3M-record.INT**
 It's recording? It's recording right now? (2008-05-03/240)

or habitual:

7.44 *niš* ***ttáhh-ax*** *i* *máṭruḥ* *díma*
 I **go.INT-1S** to Matrouh always
 I always go to Matrouh. (2009-06-19/a)

A past reading can easily be induced by appropriate context:

- 7.45 *nə-jjá* *i-sáxar* *nə-dwəl*
 1P-leave **3M-play.INT** 1P-return
 We left him **playing** and went back. (2008-08-03/246)

- 7.46 *yə-bdú* *aglás. áglas kóm. i-gálləs i-gálləs i-gálləs* *ál* *i-nfəmə*
 3M-start cry.VN cry.VN much. **3M-cry.INT** " " until 3M-blind
 He started crying – crying hard. He **kept crying and crying and crying** until he went blind. (2008-08-03/246)

The prefix *da-* cannot be combined with the “imperfect”, according to consultants' judgements (N2p140). Leguil (1986a:10), reports that, while the imperfective is realis by default, it can also be combined with the preverbal particle *ga-* to yield an irrealis value, giving the opposition *g irrah i šal ənnəs* vs. *g itraħ* “il ira régulièrement, de temps en temps” as an example; Vycichl confirms this. Such forms are quite typical in Berber. However, the two consultants asked consistently reject combinations of *ga* with the imperfective as ungrammatical (2010-01-16, 2009-12-31), and no examples of it are to be found in my corpus; instead, they freely use the “aorist” for future imperfectives, as illustrated previously. Leguil (*op. cit.*) specifically cites this as an opposition made in Siwi but not in Arabic; if it has disappeared from younger Siwis' speech, calquing from Arabic is the obvious explanation.

7.3.1.2 The imperative in Siwi

As discussed, the imperative in Siwi uses the “aorist” stem and the personal agreement markers sg. Ø, pl. *-wət*, eg:

- 7.47 *əggəz-wət* *na* *ga-n-un-awən*
descend-IMP.PL or IRR-1P-ascend-2PDat
Come down (pl. addr.) or we'll come up to you (pl.)! (N1p246)

- 7.48 *fəl* *i* *ssok* *hi:bba*
go to DEM.APPROX.2:M a bit

Go this way a bit. (2009-10-13)

If a dative agreement suffix is added, *-wət* is consistently replaced by the corresponding non-imperative agreement suffix *-m-*, a Siwi innovation with no obvious Arabic parallel:

7.49 *uɣ^w-á* *rj-í-x-a* *ámsa* *d* *amsa*,
 lo-PROX dream-PT-1S-PF thus.PROX and thus.PROX
úḡḡ^wa-m-i *hánta bəzza:bt*, *afssár-nni:s?*
say-2P-1SDat what exactly interpret.VN-3SGen?

Here, I've dreamt so and so; **tell me**, what exactly is its interpretation? (2008-08-03/248, Pharaoh addressing the wise men of the land in the Joseph story)

7.50 *š-m-i-t*
 give-2P-1SDat-3MObj
 Give (pl. addr.) it to me. (N2p7)

This does not hold for direct object pronominal suffixes, eg *aftək-wət-tət* “open (pl.) it (f.)” (N2p142.)

-wət can also be suffixed to 1st person “aorist” forms to form a hortative involving more than one person apart from the speaker (cf. Nominal features); this is not restricted to main clauses:

7.51 *nə-xśá* *aʕənʕən* *ənni* *ga-nə-ħmər-wət* *mámək...*
 1P-want sit.VN COMP IRR-1P-look-IMP.PL how...
 We want to sit down **to consider** how to... (2009-06-23/a)

Like other Berber languages, Arabic, and Afro-Asiatic in general, Siwi has several verbs which are used only in the imperative, notably *hed* “come!”, *aɣəd* “hand over!”, *ax / axxən* “take!”; these all take *-wət* with plural addressees (N1p245). “Go!” is irregular *ruħ* in the singular, but semi-regular *raħ-wət* in the plural (N2p177). *hed* is not used in the negative, where the regular *la tasəd* replaces it (N1p246). The hortative marker

hayya, pl. *hayyu* is a borrowing from an Arabic imperative (see Nominal features.)

The restriction of the imperative to “aorist” stems represents a significant change. In most Berber languages – for example, Figuig (Kossmann 1997:353), Kabyle (Vincennes & Dallet 1960:24), Tashelhiyt (Boumalk 2003:24) – the imperfective stem can also be used in positive imperatives, allowing an aspect distinction in the imperative as well as in realis forms. But Arabic allows no aspect distinctions in the imperative, positive or negative – and neither does Siwi, using the “aorist” stem even in unambiguously imperfective contexts:

7.52 *ǎbnu sǎn msa al dǎgyat*
build from evening until night
Build from evening to night! (2010-01-14)

The lack of aspectual distinction in the imperative is likely to be a Siwi calque on Arabic. Unfortunately, no evidence is available on whether this distinction is still made in Awjila, El-Fogaha, or Nafusa, so doubts must remain as to the timing of this innovation.

7.3.1.2 Suffixed *-a*

A feature of the system rather more unusual in Berber is the marker *-a*; this is placed at the end of the verbal word, following any subject or indirect object agreement markers or direct object pronominal suffixes. If the form to which it was suffixed would otherwise have ended in *ǎC*, the *ǎ* changes into *i*, eg *yusǎd* “he came” > *yusida* “he has come” (this includes *ǔ*, phonologically an allophone of *ǎ*; thus *inǎddǔm* “he slept” > *inǎddima* “he has slept”.) After a final vowel, it takes the allomorph *-ya*, eg *yǎfla* “it passed” > *yǎflaya* “it has passed”. The fact that this marker combines with the perfect has been known for some time; Leguil (1986a) interprets it as yielding a perfect. For telic verbs it focuses attention on the state resulting, rather than on the process having happened. It is illustrated by examples like the following:

7.53 *y-uná-ya i-tákkəs lanjáʃ*

3M-go up-PF 3M-pick.INT pear

He **has gone up** and is picking pears. (2009-06-21/b)

(describing the Pear Story video while watching it – the man was still up on the ladder at the moment of speech)

7.54 *llámbʷət t-ugíl-a g tasqáft*

lamp **3F-hang-PF** on ceiling

The light **is hanging** from the ceiling. (2009-06-28/a)

In subordinate clauses, the perfect is defined relative to the main clause:

7.55 *nəttá yə-lsá-ya laqmís a-zəttáf y-ʕənʕín-a zdat-zdat g*

he **3M-wear-PF** shirt M-black **3M-sit-PF** front-REDUP in

əssənmət, zɾə-x-t ndəh-γ-as

cinema, see-1S-3MObjcall out-1S-3SDat

He **having put on** a black shirt and **sat down** in front in the cinema, I saw him and called out to him. (ie “As he was wearing a black shirt sitting down in front in the cinema...”) (2008-03-05/253a)

In subordinate clauses it can also be suffixed to the imperfect, yielding a simultaneous action reading “while, in the course of” (a form not recorded in previous work):

7.56 *i-tasíd-a ət-jəhm-a əlʕarbíyya*

3M-come.INT-PF 3F-collide-3SObj car

As he was coming, a car hit him. (2008-03-05/253a)

7.57 *ʕammál t-duwwíl-a, tə-llátəm tləččá...*

PROG **3F-return.INT-PF** 3F-encounter girl...

As she was coming back, she ran into a girl... (2009-06-21/b)

7.58 *i-takil-a* *taṛ-ənnəs* *y-usəd* *g* *tbūlkət y-ən-b^wlək*
3M-walk.INT-PF foot-3SGen 3M-come in hole 3M-PASS-trip
While walking, his foot got caught in a hole and he tripped. (N2p243)

I interpret the common core of these usages as *relevance* – adding this ending asserts that the situation being described is relevant to a different, more current situation (by default, the present moment; otherwise, whatever is described by the main clause.) In this sense, the use with the imperfective is a generalisation of the concept of *perfect*, which Comrie (1976:56) defines as “the continuing relevance of a previous situation”. As seen elsewhere, this suffix can also be attached to adjectives and adverbs, eg *kom* “a lot” > *koma* (N3p3), and to *γur-* “at” + pronominal suffix when used predicatively (“have”), as noted by Vycichl (2005:248), eg *γur-is-a ya* “He has, indeed” (N1p114); a topic for future investigation is whether it emphasises relevance in such cases too.

This suffix is well-attested with the perfective in Awjila, as already noted by Basset (1935); it does not seem to be attested in El-Fogaha. Basset, and following him Leguil, connect it with the Tuareg resultative (“intensive perfect”), formed by lengthening the last vowel of the stem. This would imply that it is a retention from proto-Berber or a fairly old subfamily thereof. However, while the semantic similarity is suggestive, I find this account insufficient; it explains neither the fact that this marker is suffixed only after all pronominal affixes are added, nor the final (not stem-internal) vowel *-a*. These facts suggest that this form originally involved some kind of short post-verbal word, and Berber provides semantically and phonetically plausible candidates: cp. Kabyle *aya* “déjà, passé” (Dallet 1982), Tashelhiyt *yad* “déjà” (Destaing 1920), even the Siwi discourse particle *ya* “you know?”.

If the latter etymology is correct, then this is a relatively recent innovation shared by Siwa and Awjila. That opens up the possibility that the form was grammaticalised under the influence of dialectal Arabic, in which the perfect is distinct from the perfective. However, two facts suggest otherwise. First, the Siwi relevant imperfective seems to have no morphologised Arabic parallel, reducing rather than increasing the congruence of the two systems. Second, it seems fairly clear that Siwi is more closely related to El-

Fogaha/Sokna than to Awjila; either this feature was found in the common ancestor of all three and lost in El-Fogaha/Sokna, putting it fairly early again, or this feature spread between Siwa and Awjila through contact, and the most plausible period for contact would be before the nomads of the region got Arabised, thus when Arabic influence was still comparatively low. The simplest hypothesis seems to be that this contrast developed independently of external influence.

7.3.2 Kwarandzyey TAM

Like Berber, the southern Songhay positive TAM system makes a basic three-way distinction. However, the details differ substantially. The southern Songhay subjunctive has a far narrower range of uses than its nearest Berber equivalent, the “aorist” (irrealis perfective); it is not used for the future, nor (as in Moroccan varieties) for narrative sequences, nor even for the complements of control verbs, since many of the Berber irrealis' functions in subordinate clauses are handled by serial verb constructions with *ka*. In Songhay, the morphologically least marked form is the indicative perfective, whereas in Berber it is the “aorist”. No aspect distinctions are made in the imperative, unlike Berber. The situation is not optimal for borrowing, but opens obvious possibilities for calquing, in particular by expanding the range of the subjunctive to more closely approximate the Berber “aorist”; this appears to be borne out. Widely used auxiliaries in Berber include progressive and perfect (based on the existential verb) and inceptive (using “sit”); both appear to be calqued in Kwarandzyey.

Like Berber, Songhay divides the functions of the Arabic “imperfect” into two main categories (three including the future). The Maghrebi Arabic variety of Bechar Province has only one invariant preverbal particle, *ka-*, used rather more sparingly than in Moroccan Arabic to mark habitual or lasting situations; it also shares with other Algerian dialects a highly productive form, historically a presentative, with *ra-* plus object pronouns. Both forms have semantic parallels in Kwarandzyey not shared with other Songhay languages, discussed below – although these are best accounted for as influence from Berber, rather than Arabic.

Tashelhiyt and Figuig Berber, as well as southern Moroccan and Bechar Arabic, have all developed a future through grammaticalisation of a verb “want”. This development, as will be seen below, is shared by Kwarandzyey. Determining exactly where in the region this started is probably impossible, but, while it has some precedent in southern Songhay, the low sociolinguistic prestige and small population of Tabelbala makes it unlikely that a development initiated there would be imitated by speakers over such a broad area, suggesting that Tabelbala adopted rather than started the expression.

Tense marking not matching the default expected values for TAM forms is handled with invariant *əgga* “PAST”, placed before the subject, or with the verb *gə* “find” appropriately conjugated. Similar usages of *a gar* are found in Koyra Chiini (Heath 1999a:284), so this can be assumed to derive from common Songhay.

Cancel (1908) provides sufficient data to confirm that Kwarandzyey's TAM system has not changed much in the past century. Kossmann (2004a) is an effort to analyse Kwarandzyey's MAN system based on Cancel and Champault's materials. While this work is a very useful starting point including valuable comparative observations, the inexactness of both authors' transcriptions and the paucity of examples not in the 3rd person limit its accuracy.

A number of Berber verbs have been borrowed, eg *zəyda* “wait”, *fəd* “be thirsty” (MA Tamazight *ffad*), *zuzə* “winnow”, *ibbi* “gather (eg truffles)” (MA *bbəy*), *iddzə* “live” (MA *ddər / idir*), *yadəṛ* “lend/borrow” (Kabyle *ərdəl*), *səndəf* “reopen a wound” (Kabyle *səndəf: yəsnədf-as ul-is* “il lui a ravivé sa mal”.) These are never borrowed in the “intensive”. In the very few cases where the “aorist” and “perfect” are distinct, the Kwarandzyey reflex reflects the perfect, as might be expected from the unmarked status of the indicative perfective in Songhay MAN morphology (see below): thus *ikna* “make” (cp. Ahaggar Tuareg *əkən*), *ifra* “resolve (a dispute)” (cp. MA *fru*, 3msg. pf. *i-fra*), *izri* “throw” (cp. Ait Seghrouchen *žr*, 3msg. pf. *i-žri*). This applies whether or not the Berber 3rd person masculine singular prefix is incorporated into the stem, even though Berber “perfect” stems cannot occur without an agreement affix: *zənza* “sell” (MA *zzənz*, 3msg. pf. *i-zzənza*.)

Far more common are Arabic verbs, eg *(y)isrəx* “skin” (M. Ar. *sləx*), *(y)ihzən* “be sad” (M. Ar. *h̄zən*), *iməss* “touch” (M. Ar. *məss*). The final vowel is almost invariably ablauted to *a* whether or not *i-* is prefixed, eg *yəxra/yəxla* “be deserted” (M. Ar. *xla*, *yə-xli*), *(y)ihka* “tell a story” (M. Ar. *h̄ka*, *yə-h̄ki*), *(y)išwa* “grill” (M. Ar. *šwa*, *yə-šwi*), *səmma* “name” (M. Ar. *səmma*, *i-səmmi*), *yənna* “sing” (M. Ar. *yənna*, *i-yənni*). This pattern must reflect earlier borrowings via the Berber perfect, since forms like *ihka* are morphologically impossible in Arabic; however, it has been extended to quite recent borrowings, such as *šarža* “load up” (2008-01-30) < MAr. *šarži*, pf. *šarža* < French *charger*. On the other hand, medial vowels reflect the Arabic “imperfect” form, eg *idur* “turn” (M. Ar. *dar*, *i-dur*), *ikun* “be (generally)” (M. Ar. *kan*, *i-kun*), *išix* “melt” (M. Ar. *sax*, *i-six*), *ibən / iban* “appear” (M. Ar. *ban*, *i-ban*).

Berber borrowings that would otherwise be monosyllabic and start with a cluster CC, and Arabic borrowings that would otherwise be monosyllabic or of the form CVCV (eg *idawa* “treat (medicinally)”, M. Ar. *dawa*, *i-dawi*), are usually preceded by the 3rd person singular masculine prefix *i-/y-*, as seen. There are a few exceptions, like *sraʔ* “swallow” (Hassaniya *id.*)

7.3.2.1 Basic positive TAM markers

TAM markers in Kwarandzyey come between the subject agreement marker and the verb. There are a total of six positive ones:

Table 83.

Indicative:

Ø (with gemination of following consonant / _V)	relative past indicative perfective (optative)
<i>ba</i> (")	perfect
<i>b</i>	imperfective
<i>bab</i>	progressive

Non-indicative:

m (geminated intervocalically) subjunctive/irrealis
 Ø (sg., no gem.) / *wə-* (with gem. of following consonant / $_V$) imperative

ba and *bab* can be treated as combinations of a morpheme *ba* + the two indicative TAM markers. They will therefore be treated separately below. However, when preceded by a 3rd person singular pronoun or topicalised subject (as discussed under Nominal features), or by a non-3rd person plural *y-* and optionally *ndz-*, the initial *b* of *ba* and *bab* disappears, as does that of the auxiliary *baʕam*. For *bab*, it also disappears optionally in the 1st person singular *ʕa-a-* and 3rd person plural (with full vowel assimilation) *i-i-*. This *b*-loss had already started in Cancel's time, although it may have spread to more persons; compare the following paradigms (the status of forms in brackets is not clear from context):

Table 84.

	“go” (2008-01-03/16)	“sleep” (Cancel 1908:315, 321-322, 329)	“hit” (2008-01-03/16, 2007-12-06/AM)	“sow” (Cancel 1908:316, 322)	“hit” (2008-01-03/05)	“sleep” (Cancel 1908:311, 317)
1S	<i>ʕ-ba-dri</i>	[a]-ba- χ ani	<i>ʕ-ab-kkə</i>	(a-b-edzoum)	<i>ʕ-baʕam-kə</i>	a-baam- χ ani
2S	<i>n-ba-dri</i>	n'-ba- χ ani	<i>n-bab-kə</i>	n'-bab-edzoum	<i>n-baʕam-kə</i>	n-baam- χ ani
3S	<i>a-a-dri</i>	(a- χ ani)	<i>a-əb-kkə</i>	(a-b-edzoum)	<i>a-aʕam-kə</i>	a-âm- χ ani
NP in sg.	<i>ba-dri</i>	ba-dri “s'en va”	<i>bab-zəb</i> “is decreasing”	bab-enni n “boit”	<i>baʕam-kə</i>	ba am-dri “s'en va”
1P	<i>ya-a-dri</i>	(ia- χ ani)	<i>y-ab-kkə</i>	?	<i>y-aʕam-kə</i>	ia-âm- χ ani
2P	<i>ndz-ba-dri</i>	nd'-ba- χ ani	<i>ndz-ab-kkə</i>	?	<i>ndz-aʕam-kə</i>	nd'-baâm- χ ani
3P	<i>i-ba-dri</i>	i-ba- χ ani	<i>i-ib-kkə</i>	?	<i>i-baʕam-kə</i>	ibaâm χ ani

In slow speech, a distinction is still audible between forms like *ndzə-* and *ndz-a-*, and even *a-* and *a-a-*; in ordinary conversational data, the distinction, if maintained at all, is often inaudible to me, and my transcriptions do not consistently reflect it. I therefore rely primarily on data from the minority of sentences with 3rd person plural or clearly non-topicalised subjects, or 2nd person singular subjects, in determining the semantics of this split.

Two further basic MAN markers, *k* “ever again” and *kūm* “yet”, which also combine with *ba*, are negative polarity items, and as such will be discussed under Negation. Future *baɕam* and aspectual *g^wab*, discussed further below, belong to a separate category of “auxiliaries” - TAM markers recently grammaticalised from verbs and, though directly prefixed to verbal stems, still occasionally allowing subjunctive *m* to precede them.

bəγ “want” and *bə* “exist” take neither perfective nor imperfective TAM markers, as shown by the consistent absence of gemination in cases like:

7.59 *n-bəγ* *huwwa?* [mbɿɛ]

2S-want milk?

You want milk? (2007-12-22/11; contrasts minimally with *nə-bbəγ* “you broke” / *nə-b-bəγ* “you break”)

7.60 ...*ayi* **ɿ-bə** *ləmb^w=ka*

...I **1S-EXIST** garden=LOC

...while **I was** in the garden. (2007-12-28/04)

They are also incompatible with the imperative.

7.3.2.1.1 Perfective

Ø for the indicative perfective is pan-Songhay; the gemination of following consonants

before a vowel is shared with Tadaksahak. It is used to refer to completed actions viewed without regard to their internal structure.

- 7.61 *mma zəyd=fu, a-hhəw=as an tsi a-tn-əndz-a a-tts=asi...*
 so day=one **3S-tie=3SDat 3SGen leg 3S-rise-CAUS-3S 3S-say 3SDat**
 So one day **he bound** his leg and **got him up** and **told him...** (2007-12-22/11)

- 7.62 *məndz=tsa nə-kkürküz?*
 where=LOC **2S-lunch?**
 Where **did you eat lunch?** (2007-12-22/13)

<**aɣan** biinou>

***ɣa-kkan** binu

1S-sleep yesterday

“je dormais hier” (Cancel 1908:315)

I slept yesterday.

It does not highlight their continuing relevance, if any, but is not ruled out in cases where the results of the action remain relevant, eg:

- 7.63 *a-aɣam-bəy ba=i-kkani*
 3S-FUT-know person=**3P-sleep**
 He will know that people **have** (in context, just) **gone to sleep.** (2007-12-21/33)

With non-stative verbs, it is normally translated into local Arabic using the past perfective alone.

With stative/adjectival verbs, it yields a gnomic reading:

- 7.64 *bəngbin=i-ggəb*
 foggara=**3P=tough**
 The foggaras (underground water channels) **are tough** (to work). (2007-12-

22/11)

7.65 *tsin a-iʕazz=a.ka, laħlawəts*
 date **3S-dear**=3S.Loc sweetness

Dates **are dear** to it (the dragonfly), (for their) sweetness. (2007-12-22/11)

7.66 *gg i-b-ka yaɾ tsiru n lwəqt, bəʕʕəħ tsəksi i-yəskün*
 PAST 3P-IMPF-come only bird GEN time, but now **3P-inhabit**

They used to come only in the time of birds (spring, when migrant birds pass by), but now **they live** here. (2008-01-01/v)

In subordinate temporal clauses, the perfective indicates that the event was completed by the time of the main clause:

7.67 *lūxxūd a-tnu, a-gg^wab-iɖlaʕ ndza tsi=ɣu*
 when **3S-rise**3S-INCEPT-limp with foot=DEM

When **he got up**, he started limping with this foot. (2007-12-22/11)

7.68 *lahuwwa lūxxūd rɾbiʕ a-ttu-tsi, i-m-gwib-həy tsaffvərts.*
 but when spring **3S-arrive-hither** 3P-IRR-INCEPT-bear egg

But when spring **has come**, they will start bearing eggs. (2007-12-21/31)

7.69 *lūxxūd nə-ddər landan=si, nə-m-dza nən ʕiniyya*
 when **2S-go** London=DAT 2S-IRR-put 2S Gen tray

When you **have gone** to London, you will/should put out your tray... (2007-12-22/12)

In general it does not appear that the perfect is used in stand-alone main clauses with a non-past reading, so the “relative past” qualifier above is necessary, as in Arabic. It is not clear whether this holds true elsewhere in Songhay.

7.3.2.1.2 Optative

Ø is also used for optatives with the complementiser *nɗər* (Kossmann also notes examples from Champault without a complementiser, but no clear cases are to be found in my data):

7.70 *nɗər nə-wwu*
 OPT 2S-heal
May you get better!

This usage seems to have no recorded parallels in southern Songhay, where reflexes of *ma* are used (Sibomana 2008:40); even in Kwarandzyey, the complex optative in *adm* seems likely to preserve a similar usage (see below.) It has parallels in classical Arabic, where the “perfect” is used in wishes (eg *raḥimahu ʔllāhu* “God have mercy on him”), but not in colloquial Maghrebi Arabic. A more plausible external source would be Berber, where the “perfect” is widely used in optatives: eg Ait Seghrouchen *t-nsi-d as i lman* “may you sleep in tranquility = good night” (Bentolila 1981:151). However, a contact explanation appears superfluous in light of its etymology. *nɗər* appears cognate to Tadaksahak *əndār* “if, hypothetical”, which takes a following clause in the perfective, eg:

əndār aya=bbáy sa Táha a=ʃʃi n(e) áyda
 if 1s-know comp T. 3s-not.be place same
ay=sə-kóy-kat.

1s-neg:imperf-leave-ven

If I had known that T. is not here, I wouldn’t have come. (Christiansen-Bolli 2010:277)

As Christiansen notes, *əndār* “if (hypothetical)” is also used in Malian Tamasheq; in the absence of cognates elsewhere in Berber, it could itself plausibly be explained as a combination from Songhay *nda* “if” and Berber *ar* “only” (Tamashek *ar*, Zenaga *ār*.)

7.3.2.1.3 Imperfective

b differs from the southern Songhay imperfective but is shared with all northern Songhay languages; the best southern Songhay comparison is the “strong imperfective”, KS *mba/mma/ma* and HS *bòw / bò kù*, used probably for VP focus of imperfective clauses (Heath 1999b:201ff; 2007:234), although a direct derivation from **bara* “exist” may also be considered. In matrix clauses it is used to express gnomic actions:

7.71 *nə-b-qum-a* *ħar* *kawkaw?*
 2S-IMPF-crunch-3S like peanut?
 You eat it [locusts] like peanuts? (2007-12-06/AM)

7.72 *tsuy=a* *n-b-dza* *lħanuts=tsa?*
 what=FOC 2S-IMPF-do shop=LOC
 What do you do at the shop? (2007-12-22/13)

The default reading is relative non-past. A past imperfective in a main clause is normally formed using *gga*, discussed below. In adverbial subordinate clauses, *b* expresses ongoing or simultaneous action, notably following *dri* “go” in the sense of “spend (time) doing”:

7.73 *nə-m-dər* *yuməyn* *wəlla tlata* *nə-b-fəz-a*
 2S-IRR-go two days or three 2S-IMPF-dig-3S
 You spend two or three days **digging it**. (2008-01-01/08)

7.74 *n-bab-dər* *nə-b-zru!*
 2S-PROG-go 2S-IMPF-run
 You would go (towards the trap) **running!** (2007-12-22/11)

Apart from this, *b* is somewhat idiosyncratically used for the complement of *wən* “refuse, not want”:

7.75 *a-tts=i.s* *wəy=fu* *bq=γəy.ši* *a-wwən a-b-yintəq*
 3S-say=3P.Dat woman=one EXIST=1S.DAT 3S-refuse 3S-IMPF-speak

He told them: I have a woman who refuses **to speak**. (2008-01-30/10)

7.3.2.1.4 Subjunctive/irrealis

m has cognates throughout Songhay, eg KC/KS *ma*. It is used, however, in a rather broader range of contexts than in southern Songhay, less focused on deontic senses and more behaving as the default irrealis form. As throughout Songhay, this includes most irrealis complement clauses:

7.76 *aywa ṣaḥḥa ni n-bəγ əlmahd a-m-hnu-ts wəlla?*
 well really you 2S-want Mahdi **3S-IRR-go out-hither** or?
 Well, you, do you really want the Mahdi **to emerge**? (2007-12-11/24)

7.77 *a-ba uy=bab-hina a-m-γ-ana llabuw məsdzi*
 3S-EXIST REL=PROG-able **3S-IRR-eat-3SEmph** fresh thus.ANA
 There are some who can **eat it** fresh like this. (2007-12-22/11)

7.78 *nə-mmən nə-m-fənd-a*
 2S-near **2S-IRR-blind-3S**
 You nearly **blinded him**. (2008-02-05/17)

7.79 *ṣandək nə-m-γ-a*
 beware **2S-IRR-eat-3S**
 Mind **you don't eat it!** (2007-12-22/11)

<*ibr'i mgour iri*>

**i-bəγ i-m-gʷūr iri*
 3P-want 3P-**IRR**-draw water
 “ils veulent tirer de l'eau” (Cancel 1908:320)
 They want to draw water.

m is also used in matrix clauses for suggestions relating to as yet unrealised actions and

in explaining how to do something, as in Tadaksahak (Christiansen-Bolli 2010:173); as such, it can imply futurity:

7.80 *lǔxxūd yə-yyər-tsi* *yə-m-kəmməl*
 when 1P-return-hither **1P-IRR-finish**
 When we get back, **we'll finish**. (2007-11-15/05)

7.81 *lǔxədz n-baʕam-kə yu n huwwa, nə-m-dzam-a timya=ka,*
 when 2S-FUT-churn camel GEN milk **2S-IRR-put-3S** goatskin bag=LOC
nə-m-həw-a yu=s an dhə=s.
2S-IRR-tie-3S camel=DAT 3S Gen back=DAT

When you want to churn camels' milk, **you put it** in a goatskin bag and **tie it** to a camel on its back. (2007-11-15/05)

It can also be used to express a sequence of closely connected actions, like southern Songhay *ká*, with the first action in the imperfective:

7.82 *ʕalahəqqəš gung^{wə} kədda lǔxxūdz a-b-nən, nə-m-gə*
 because chicken little when 3S-IMPF-drink, 2S-IRR-find
a-b-kə an mi, a-m-yər a-m-ʕa-ndza an bənyu
 3S-IMPF-hit 3S Gen mouth **3S-IRR-again3S-IRR-rise-CAUS** 3S Gen head
 Because a chick, when it drinks, you'll find it hits its mouth **then raises** its head **again**. (2007-12-21/31)

the future:

7.83 *ʕar nə-m-dza=a.s bəşşər a-aʕam-išəmm-a a-m-kən*
 just 2S-IRR-put=3S.Dat onion 3S-FUT-smell-3S **3S-IRR-fall**
 You just put out onion for it, it will smell it **and fall down**. (2008-01-01/05)

or the imperative:

- 7.84 *wə-ttən ndzə-m-səggəd tsəksi*
 IMP.PL-get up 2P-IRR-head off now
 Get up **and get going** now. (2008-02-05/17)

This does not seem to be used with a sequence of events viewed perfectly, no matter how closely tied the events are:

- 7.85 *a:bəbq, a-kkə a-bbəy-bəy zzlafəts*
 whoa, 3S-hit 3S-break-REDUP plate
 Whoa, she's hit and broken the plate. (2007-12-16/02, describing MPI video 018P_hammerhitbreak (Bohnemeyer, Bowerman, & Brown 2001))

It is also used for unrealised (not necessarily counterfactual) conclusions in conditionals:

- 7.86 *ndza nə-s-ba-yʃalləm, ndza nə-m-nən lkas=fu nə-m-gʷəb-səyyəb*
 if 2S-NEG-PF-learn if 2S-IRR-drink cup=one 2S-IRR-INCEPT-vomit
 If you haven't learned, if you drink a cup, **you'll start vomiting**. (2007-12-06/AM)

7.3.2.1.5 Divine agency optative

A rare and largely unproductive optative form is constructed by placing *adm/amn/abn/adn* (N9p8) before a verb, yielding an optative interpretation with God as the agent:

- 7.87 *adm-gəw-ni*
 DIV.OPT-help-2S
 May God help you.
- 7.88 *adm-təbbət=ni.si*
 DIV.OPT-make secure=2S.Dat

May God make it (your reward) secure for you (condolence formula addressed to bereaved)

This might be interpreted as an optative use of *m*, but the corresponding negative with *ams* (see below) suggest otherwise. Synchronically, *adm* is best left unanalysed as a semantically complex optative construction, comparable to southwestern Maghrebi Arabic *lāhla* “may God not”. Etymologically, a likely-looking source for this is the Berber irrealis marker *ad*, used in optatives in many varieties including Zenaga (Taine-Cheikh 2008b), plus Songhay *m*, discussed above; but that leaves the divine agency part of the meaning unexplained.

7.3.2.1.6 Imperative

The imperative is unmarked for singular addressee (and features no gemination), while for plural addressees it takes *wə-* plus gemination of an initial consonant followed by a vowel (pan-Songhay comparisons are given under Nominal features), eg:

7.89 *iyyəh, ka-ts səjjəl amγəzzinu=γ=yu!*
 Yeah, **come-hither record** old man=DEM=PL
 Yeah, **come record** these old men! (2007-12-11/24, addressing interviewer)

7.90 *wə-tnu!*
 IMP.PL-get up
 Get up! (plural addressee) (N4p19)

In combination with the 1st person plural dative, it can also be used as a hortative form:

7.91 *wə-ttən=ya.si!*
 IMP.PL-get up=**1P.Dat**
Let's get up! (N7p6)

This usage seems to be unrecorded in southern Songhay, and no good parallel exists in

Arabic (*yəlləh* “come on!”, originally an interjection, can idiosyncratically be followed by *bi-na* “with us”, but this is an instrumental rather than a dative form.) Rather, it is an obvious calque on Berber; *ay/ax/ax-dd* “1P.Dat(-Centrip)” is added to an imperative form (singular or plural) to mark the 1st person plural hortative in Tashelhiyt (Boumalk 2003:24), Ait Seghrouchen Tamazight (Bentolila 1981:141), Figuig (Kossmann 1997:347), and Tamashek (Heath 2005a:323). Tadaksahak uses the same construction (Christiansen-Bolli 2010:180), so the influence in question might predate the split of Northern Songhay.

As in other North African languages, and as in Afro-Asiatic in general (Newman 2002; Veselinova 2006), several verbs can be used only in the imperative. No such phenomenon has been noted for TSK (Heath 2005b:174), KC (Heath 1999a:165), KS (Heath 1999b:212), or Zarma (Sibomana 2008:41); its only reported parallel in southern Songhay seems to be in Hombori Senni (Heath 2007:sec. 7.3), and none of the specific suppletive imperatives found there have suppletive Kwarandzyey cognates. *dzini* “take (an object being handed over)!” is an inherited verb (cp. KC *din* “take”) that happens to have become restricted to the imperative; its cognate *dzən* “affect” is used only with environmental states (eg *fufu* “cold”) as subjects and affected humans as objects, and cannot synchronically be considered as the same verb. The others, *qra-tsi* “hand over!” and *yəlləh* “come on!”, are loanwords, common to Maghrebi Arabic and Berber (in the former case plus a Songhay centripetal suffix.) These are all demonstrably imperatives in that they can take normal plural marking (although the initial vowel of *qra* is dropped):

7.92 *wə-ɾɾa-ts* *ɬabla=dzi!*
IMP.PL-hand-hithertable=ANA
Hand over that table! (N5p223)

7.93 *wə-ddzin* *əɬtabla!*
IMP.PL-take table
Take the table!

- 7.94 *wə-yəllah=ya.si!*
2P-come on=1P.Dat
 Let's go!

7.3.2.2 Pre-mood/aspect marker *ba*

As seen above, the two indicative positive mood/aspect markers are compatible with *ba*: perfective \emptyset and imperfective *b*, respectively yielding perfect and progressive. Examples and discussion of semantics follows. As will be seen under negation, *ba* is also compatible with the negative polarity MAN markers *kūm* “yet” and *k* “ever again”. The common meaning could be taken as ongoing relevance; this is reminiscent of the Siwi case discussed above, but the combination with the imperfective has a considerably wider scope in Kwarandzyey. The etymology of this marker is a matter of some interest; is it the result of external influence, or independent development?

A comparable dichotomy between what Heath labels “weak” and “strong” indicative forms is found in at least two other Songhay languages. Koyraboro Senni contrasts weak perfective \emptyset and imperfective *ga* with strong perfective *ŋka* and imperfective *mma ~ mba ~ ma*; Heath (1999b:201ff) tentatively regards the strong set as conveying perfect meaning and/or VP-focus and intensive (that is, emphatic) imperfective respectively. Humburi Senni (Heath 2007:234) contrasts weak perfective \emptyset and imperfective *gú / w* with strong perfective *nàŋ* and imperfective *bòw / bò kù*; the strong perfective again has perfect and VP-focusing uses, the strong imperfective is used when any element is placed in focus. However, there is no plausible etymological link between the strong perfective of KS and HS and the *ba* of Kwarandzyey; it is tempting to suggest a link between the strong imperfective and Kwarandzyey *bab*, but that would make accounting for the Northern Songhay *b* imperfective harder as well as leaving *ba* unexplained.

Instead, a phonetically plausible Kwarandzyey-internal etymology could explain both forms, rather than just one: *bə* “exist”. *bə* is used in possession constructions, and the formation of a perfect from a possessive predicate is well-attested; likewise, *bə* is used

in locative predication, and locative > continuous is equally well-attested (Heine & Kuteva 2002:245, 203). However, precisely this grammaticalisation process has occurred in a number of Berber languages of Morocco and the northern Sahara (Chaker 1997). In Ait Seghrouchen Tamazight, the preverbal particle *lla* – transparently derived from *lla*, the perfect stem of *ili* “be, exist” – combines with the “perfect” to yield what Bentolila calls “une légère emphase (“déjà”, “justement”)” (“a slight emphasis (already, just)”), and with the “intensive” to emphasise a process's durative/iterative aspect (Bentolila 1981:117, 145); the same particle is used by some Ait Yafelman speakers (Willms 1972:215), though most southeastern Moroccan dialects use *da-*. A slightly less advanced stage in the process – with similar semantics, but with *ili* still conjugated as an independent verb – is found in Figuig (Kossmann 1997:366) and Tumzabt (Chaker, *op. cit.*), again followed by both “perfect” and “intensive” verb forms. No such usage appears to be found in Tashelhiyt (Destaing 1928; Boumalk 2003), but there is lexical evidence for contact with Zenati Berber languages, so grammaticalisation of a calque on Berber remains a plausible explanation for this development in Kwarandzyey.

Regional Arabic offers only a half-parallel; its preverbal prefix *ka-* (from *kan* “was”), is used only with the “imperfect”, and in the Bechar region is mainly restricted to gnomic statements with present relevance. The translation equivalent of Kwarandzyey *ba-*, Arabic *ra-*, is historically a presentative rather than an existential marker. Cancel (1908:321) also compares *ba* to Arabic forms with *ra-*, suggesting that it has been the preferred translation for the past century.

7.3.2.2.1 Perfect

Combined with the perfective, *ba* yields a perfect reading with non-stative verbs, implying a completed event with ongoing relevance to the discourse present translated into Arabic with the perfect (the active participle), usually preceded by originally presentative *ra-*:

7.95 *ižwəy=γu* ***ba-hharrəm*** *mərṭu*
 girl=DEM **PF-carry** hammer

This girl **has picked up** a hammer. (2007-12-16/02, describing MPI video 018P_hammerhitbreak (Bohnmeyer, Bowerman, & Brown 2001) as it was playing)

7.96 *lhaj ħməd, tsuy=a lɛam uy n-ba-yzid?*
 Hadj Hmed what=FOC year REL **2S-PF-be born?**
 Hadj Hmed, what year **were you born** in? (2007-12-22/24)

7.97 *q-ba igadənən=γ=yu, i-ba-ffəg dzəw n tsir=ka*
 3S-EXIST wall.PL=DEM=PL **3P-PF-bury** earth GEN under=LOC
 There are these walls, they **are buried** beneath the earth. (2007-12-22/12)

7.98 *tsūγ n-ba-ḏḏəb?*
 what **2S-PF-wear?**
 What **are you wearing?** (2008-02-05/17)

With some motion verbs, it yields what looks like a progressive reading; like the parallel usage of Arabic *ṣayəḥ*, this can be regarded as perfects describing states resulting from the inception of an activity taken as punctual (Cuvalay-Haak 1997:188):

7.99 *ini məndz i-ba-dri?*
 they where? **3P-PF-go?**
 Where **are they going?** (2008-01-03/16)

Stative/adjectival predication with continuing relevance to the discourse present is handled with *ba*, usually translated as *ra-* plus the appropriate adjective:

7.100 *nən kəmb=i-ba-qqūx n-bab-sku-ndz-a*
 2SGen hand=**3P-PF-frozen/dry** 2S-PROG-be caught-CAUS-3S
 You'd be catching them with your hands **frozen**. (2007-12-06/AM)

7.101 *n-ba-təndz kədda?*
2S-PF-still little? (“still” is a verb)

You're still little? (2007-12-22/13)

- 7.103 *a-tts iytsa an tsi ba-dḍar-ana*
 3S-say lo 3S.Gen foot **PF-hurt-3SEmph**
 He said his foot **was hurting** him. (2007-12-22/11)

- 7.104 *agga ba=i=ba-yāṣha*
 PAST person=**3P=PF-healthy**
 People **used to be healthy**. (2007-12-06/AM)

7.3.2.2.2 Progressive

bab-, ie *ba* plus the imperfective, is used primarily to express ongoing actions relative to the reference time, usually present:

- 7.105 *a ṣan ba itsa ḥam=uyu, itsa n-bab-kattar=a.s uru*
 oh 1SGen friend lo meat=DEM lo **2S-PROG-make much=2S.Dat** fire
 My friend, look, this meat, you're giving it too much fire. (2007-12-06/AM)

- 7.106 *n-bab-tsyu ssana-zzawja?*
2S-PROG-study second grade?
You're studying the second grade? (2007-12-22/13)

Occasionally, especially with *tsi* “say”, this shades into gnomic uses:

- 7.107 *məsd=a i-bab-ts=a.si*
 thus.ANA=FOC **3P-PROG-say=3S.Dat**
 That's how **they call** it. (2007-12-28/03)

While the default interpretation is present time, it is used more generally in matrix clauses to indicate actions ongoing at the reference time:

- 7.107 *affū* *ʕ-ba* *ʕ-indz-ana,* *an=á* ***bab-gwi*** *ya.s*
 one 1S-EXIST 1S-with-3S 3S=FOC **PROG-cook** 1P.Dat
 Someone I was with, it was him that **was cooking** for us. (2007-12-06/AM)
 (context: describing a trip the speaker went on in his youth)

or even in irrealis contexts, perhaps to give a sense of immediacy:

- 7.108 *tsirəw* *lūxxūdz a-sku,* ***n-bab-tsə*** *ħlal!* ***n-bab-dər*** *nə-b-zru!*
 bird when 3S-caught **2S-PROG-say** halal **2S-PROG-go** 2S-IMPF-run
 When a bird gets caught (in your trap), **you'll say** “halal”! **You'll go** running!
 (2007-12-22/11)

7.3.2.3 Auxiliaries: *baʕam*, *gʷab*

These cannot be treated as lexical verbs, insofar as they are directly followed by verb stems rather than by subject agreement marker + MAN marker + verb. They cannot be treated as belonging to the same word class as other MAN markers either, because in some marginal contexts they can be preceded by the MAN marker *m*.

7.3.2.3.1 Future/desiderative *baʕam*

Like *ba*, as seen above, *baʕam* drops its *b* with pronominal 3rd person singular subjects and with 1st and 2nd person plural subject agreement prefixes. However, it is unlikely to share the same history, and syntactically shows rather different behaviour.

Etymologically, *baʕam* is transparently derived from *bəy* “want” + *m* “irrealis” (the change of *γ* to *ʕ* is found in the 1st person prefix *ʕa-* and in the alternations *maɣa* / *məʕa* “why?” and *ʕɣa* / *ʕʕa* “go up”.) The absence of subject markers intervening between the two demonstrates that it has been grammaticalised. It still retains a desiderative sense in some usages:

- 7.109 *xūd* ***n-baʕam-gugʷa-ndza*** *lhəybuš*
 when **2S-FUT-laugh-CAUS** children

When you want to make children laugh. (2007-12-22/13, explaining the use of a nursery rhyme equivalent to “This little piggy went to market...”)

At least in this sense, it even seems to be attested occasionally with a preceding *m*:

7.110 *əyts uyuna=fũ adzi, ənnükta=fũ kədda. nə-m-baʕam-ʂəntʃ=a.si.*
 lo whatsit=one ID.ANA anecdote=one small **2S-IRR-FUT-listen=3S.Dat**
 Here, this is a whatsit, a little anecdote. **You will/should/might want to listen**
 to it. (2007-12-22/11)

Its standard translation into regional Arabic in all contexts is *baʕi* “wanting”. However, it is used as a future marker, including cases where a desiderative reading would be clearly inappropriate:

7.111 *ndza a-hnu-ts iz=ka, iytsa n-yəmma baʕam-həy izi*
 if 3S-go out-hither boy=LOC PRES 2S-mother **FUT-bear** boy
 If it comes out on “boy”, your mother **will bear** a boy. (2007-12-22/13,
 describing children's beliefs about a nursery rhyme similar to English “she loves me,
 she loves me not...”)

7.112 *ʕar nə-m-dz(a)=a.s bəʂʂər a-aʕam-iʂəmm-a a-m-kən*
 just 2S-IRR-put=3S.Dat onion **3S-FUT-smell-3S** 3S-IRR-fall
 You just put out onion for it (the bird), **it will smell it** and fall down. (2008-01-
 01/05)

7.113 *əytsa a-aʕamm-ibda a-b-itbəx*
 lo **3S-FUT-start** 3S-IMPF-boil
 Look, **it** (the kettle) **is about to start** to boil. (2008-01-st/T)

baʕam cannot be followed by any MAN marker except *k* “ever again”, discussed below (note that irrealis/subjunctive *m* on its own cannot be followed by *k*):

- 7.114 *uyudz* *a-s-baŕam-k-yiqda* *xlaŕ*
 DEM.ANA 3S-NEG-FUT-anymore-finish that's all
 This one **will never finish**, that's it. (2007-12-06/11)

In southern Songhay, cognates of *bəy* such as Koyra Chiini/Koyraboro Senni *baa* “want” (Heath 1999b; 1999a) already mean “be about to...” when followed by a serial verb, giving the common grammaticalisation process from “want” to future marker a head start; in fact, Dendi (Zima 1994:31) has done almost the same thing, developing a future marker *bá* (though with no reflex of the subjunctive marker.) However, the same grammaticalisation is rather widespread in Berber: within the immediate region it has occurred in Tashelhiyt (*rad / irad < i-ra* “he wants” + *ad*), Southern Berber to some extent (*rad* id. - Willms (1972:214)), and Figuig Berber (*sad < i-xsa* “he wants” + *ad*), while, slightly further afield, Tarifit has *sa ad-/xa ad-* (Lafkioui 2007:190), Nafusi has *sad-* (Beguinet 1931), and Tumzabt has retained the original conjugated lexical verb, *i-xsa ad-* (Chaker 1997). It is perhaps less common but also widespread in Arabic, notably in this area: in the Bechar region, and throughout southern Morocco (Heath 2002:217), *bayi* (the perfect of *bya* “want”) or variants are routinely used as a future marker, and the same usage is found in central Arabia (Ingham 1994:190). It is implausible that, in a region of widespread bilingualism and language shift, these developments in the adjacent languages of Tashelhiyt, Figuig, regional Arabic, and Kwarandzyey are completely independent of one another, all the more so given that the Arabic cognate is familiar enough to Belbalis to be the usual translation of *baŕam*, and given the frequent Moroccan Berber borrowings in Kwarandzyey. A good parallel is offered by Romani, where “want”-futures and “go”-futures have been grammaticalised only in areas where the surrounding languages were already using them, confirming the role of contact (Boretzky 1989:368). The low sociolinguistic position and population of Tabelbala suggest that it calqued the construction from Berber and/or Arabic, even though the first stages of the grammaticalisation process can probably be reconstructed for proto-Songhay; the possible effects of mutual influence between Berber and Arabic are beyond the scope of this work.

7.3.2.3.2 Inceptive *gʷab*

This construction transparently derives from *g^wa* “sit, remain” plus imperfective *b*. It appears less strongly grammaticalised than *baɬam*, in that it is freely prefixed with MAN markers and still has a distinct 3P form, *g^wib*. It is used to indicate starting a durative activity:

7.115 *luxüdz yə-ttəz, kigi, ʕan tsa, a-gg^wab-yiktsəb tsəgərdəs*
 when 1P-dine last night 1SGen brother **3S-INCEPT-write** letter
 After we dined last night, my brother, he **started writing** letters. (2007-12-28/04)

(response to “When you saw your brother yesterday, what did he do after you had dinner?”)

7.116 *lūxxüdz a-tnu, a-gg^wab-iqlaɬ ndza tsi=yu*
 when 3S-rise **3S-INCEPT-limp** with foot=DEM

When he got up, **he started limping** with this foot. (2007-12-22/11; note impossibility of limping while sitting)

It is commonly attested preceded by *m*:

7.117 *i-m-dz(a)=a.tsa tsiri, nə-m-g^wəb-əny-a ħar kawkəw*
 3P-IRR-put=3S.Loc salt **2S-IRR-INCEPT-eat-3S** like peanut

They put salt on it (the locusts) and **you start eating it** like peanuts. (2007-12-06/AM)

and less commonly *baɬam*:

7.118 *ʕ-baɬam-g^wəb-ha-ni*
 1S-FUT-INCEPT-ask-2S

I will/want to start asking you. (2008-02-05/17)

If the subject is 3rd person plural, it appears as *g^wib* < **g^wa i-b-*:

- 7.119 *lahuwwa lüxxüd r̄rbiç a-ttu-tsi, i-m-g^wib-hay tsaff^varts.*
 but when spring 3S-arrive-hither **3P-IRR-INCEPT-bear** egg
 But when spring has come, **they start bearing** eggs. (2007-12-21/31)

This usage of “sit” does not appear to be attested in any available Songhay dictionary, nor is it to be found in texts examined (Heath 1998a; 1998b). In North Africa, on the other hand, it is widely attested. For Berber, Chaker (1997) notes it as widespread, giving a Kabyle example; closer to Tabelbala, for Middle Atlas Tamazight, Taifi (1991:189) gives the following example:

i-qqim ar i-teşsa
 3M-sit PROG 3M-laugh.INT
 “Il se mit à rire”
 He started laughing.

The same translation, “se mettre à”, is given for the auxiliary usage of *qqim* “sit”, sadly without examples, for the Tamazight of Ait Atta, the closest Berber group in recent times to Tabelbala (Amaniss 1980), confirming the plausibility of influence. It is also used, possibly as a result of Berber influence, in much of Maghrebi Arabic – *gʕad* “sit” is normally used in Tabelbala to translate this construction, and Prémare (1993): notes “*gʕad* + v. à l’inacc.: s’installer pour faire qqch, se mettre à” for the Arabic of Rabat, while Beaussier (1958) notes the same usage for Algeria/Tunisia. The Kwarandzyey usage is thus a calque on Berber and/or Arabic. However, whereas in Berber and Arabic it remains a lexical verb with an idiomatic meaning, in Kwarandzyey its grammaticalisation has gone far further.

7.4 Finiteness

There are three major functions that may be filled by non-finite forms: to fill positions normally occupied by nominals (“nominalisations”), including cognate objects; to form non-finite clauses, notably as complements of control verbs (“infinitives”); and serial

verbs.

In Songhay, nominalisations are formed through suffixation with some irregularities, whereas control and serial verb constructions place the marker *ka* before the verb stem. In Classical Arabic, and to a limited extent Tamasheq, nominalisations can also act as infinitives, while serial clauses use finite verbs. In most varieties of Arabic and Berber, however, the only non-finite forms are nominalisations; there are no infinitival forms forming clauses whose subject is supplied by the operator verb. Throughout Arabic and Berber, there is at least one nominalisation for almost every verb, formed using a wide variety of templates which must often be learned individually. Verbal nouns in both languages are also used as cognate objects, emphasising the action and sometimes fulfilling adverbial functions or marking VP focus.

For Tabelbala, the absence of non-finite forms in neighbouring languages in the contexts of *ka* suggests the prediction that calquing will lead to the replacement of *ka* by finite forms (assuming *ka* was original rather than having been a loan into Southern Songhay.) For both languages, the high degree of lexicalisation of verbal nouns in Arabic and Berber suggests that they might be borrowed as such, rather than being formed only using language-internal productive means. These predictions are borne out fairly well for Kwarandzyey, but less so for Siwi, for language-internal reasons which will be seen below.

7.4.1 Non-finite forms in Siwi

Like other Berber languages, Siwi has a verbal noun corresponding to practically every verb. The system includes a fair amount of irregularity, but it is possible to discern rules allowing most cases to be predicted from the phonological structure of the “aorist” (in the following table, $v = a/i/u/\emptyset$, $V = a/i/u$):

Table 85.

Verbal noun form	“Aorist” stem form	Eg	Cp. Figuig (Kossmann 1997:163ff)
<i>a- + stem</i>	> 1 syllable, C...vC; or ...u/i	<i>aʕəlləf</i> “to cut grass” (N2p5), <i>asiwəl</i> “to speak” (N2p19), <i>aʕənʕən</i> “to sit” (N3p92), <i>anyraq</i> “to drown” (N2p193), <i>astanəs</i> “to stay up late chatting” (N2p104); <i>akku</i> “to smell” < <i>kku</i> (N2p117), <i>abnu</i> “to build” < <i>bnu</i> (N2p193), <i>asili</i> “to burden” < <i>sili</i> (N2p47)	<i>ajəyyəf</i> “étrangler” < <i>jəyyəf</i> , <i>asiwəl</i> “parler” < <i>ssiwəl</i>
<i>a-...-i</i>	... <i>i</i>	<i>ašwi</i> “to grill” < <i>šwa</i> (N2p235), <i>aħfi</i> “to be sore (feet)” < <i>ħfa</i> (N2p259, 2010- 01-14)	-
<i>a-...CC-i</i>	...CC; <i>s-CəC</i>	<i>ajəlli</i> “to swear” < <i>jəll</i> (N3p50), <i>aʕəddi</i> “to count” < <i>ʕədd</i> (N2p24), <i>aqq^wi</i> “to finish” < <i>qq^w</i> (N2p24), <i>abb^wi</i> “to carry” < <i>bb^w</i> (N3p83, N2p186), <i>aħəjji</i> “to make pilgrimage” < <i>ħəjj</i> (N2p146), <i>azərzi</i> “to scatter” < <i>zərz</i> (N2p118); <i>asəkni</i> “to show” < <i>s-kən</i> (2009-06-22/a), <i>asəyri</i> “to teach” < <i>s-γər</i> (2009-10-13)	<i>abəddi</i> “être debout” < <i>bədd</i> , <i>ayəzz</i> “mâcher” < <i>γəzz</i>

<i>a-CC-a</i>	<i>CC-ay</i>	<i>aɣəlla</i> “to go about” < <i>ɣlay</i> (N2p228), <i>afəlla</i> “to split (wood)” < <i>flay</i> (2010-01-14/a)	-
<i>a-C₁C₂aC₃</i>	<i>C₁C₂əC₃</i>	<i>aqɛtam</i> “to cut” < <i>qɛtam</i> “cut” (N2p5), <i>akɛrab</i> “to pull” < <i>kɛrab</i> (N3p83), <i>aggaz</i> “to go down” < <i>ggəz</i> (N3p7), <i>allaf</i> “to divorce” < <i>lləf</i> (N3p50)	<i>afrəd</i> “balayer” < <i>fɾəd</i> ; <i>iqqad</i> “brûler” < <i>qqəd</i>
<i>ti-C[C]-i</i>	<i>[V][Cə]C</i>	<i>tiwni</i> “to go up” < <i>wən</i> (N3p7), <i>tifli</i> “to go” < <i>fəl</i> (N2p47), <i>tiħli</i> “to get in trouble” < <i>uħəl</i> (N3p66), <i>tikli</i> “to walk” < <i>ukəl</i> (N2p68); +irregular <i>tizdi</i> “to come” (3M/3F/1P/+dat aorist stem <i>usəd</i>), <i>tiħi</i> “to go” (1S/2S/2P/3P aorist stem <i>ħ</i> ; N3p83), <i>tiši</i> “to give” (stems <i>š</i> / <i>uš</i> , depending on person; N2p177), <i>tiyi</i> “to buy” (aor. <i>wəy</i> < <i>*uy</i> ; N3p21, N2p108)	<i>tiski</i> “bâtir” < <i>sək</i> , <i>tiyri</i> “lire” < <i>ɣər</i>
<i>ti-CiC-i</i>	<i>CaC</i>	<i>tifiti</i> “to yawn” < <i>fat</i> (N3p22), <i>tizini</i> “to divide” < <i>zan</i> (2009-06-23/a, N2p39), <i>tiqidi</i> “to take s.o. with” < <i>qad</i> (N2p146), <i>tišidi</i> “to hunt” < <i>šad</i> (N3p1)	(<i>tifatt</i> “passer” < <i>fat</i>)
<i>a-CCu/iC-i</i> (with degemination of initial C:)	<i>CCu/iC</i>	<i>aluži</i> “to hunger” < <i>lluz</i> (N3p45), <i>aqimi</i> “to stay” < <i>qqim</i> (N3p45), <i>asuqi</i> “to drive” < <i>suq</i> (N2p14,	<i>ayimi</i> “rester” < <i>qqim</i>

		N2p213), <i>askimi</i> “to put in” < <i>s-kim</i> (N2p25)	
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While almost every form has some precedent in other Berber languages, the system has developed in rather different directions than most, generalising forms sometimes rare elsewhere and in general eliminating many irregularities; for example, the pan-Berber irregular form *laz* “hunger” has been replaced by the regular (for Siwi) form *aluži*. Still, there remain many irregular forms, eg *tirufi* “to fear” < *rəf* (N2p155, N3p122), *tarwa* “to bear (a child)” < *irəw* (N2p157), *anəγγa* “to kill/turn off” < *nəγ* (N2p185, N2p121), *aṭṭan* “to be ill; illness” < *uṭən* (N2p263), *ačču* “to eat” < *əčč* (cp. *n-ačču* “food”.) There is occasional variation, eg *afəllay* / *afəlla* “split wood” < *flay*. Other minor nominalisations, such as *ššərs* “urinate” (N2p87) ↔ *išərsen* “urine”, exist without fulfilling the functions of the infinitive. Unusually for Berber, all abstract verbal nouns, including ones in *ti-*, are masculine, eg:

7.120	<i>tṣwi</i>	<i>lāxməṛ</i>	<i>a-šmál</i>	<i>gən</i>	<i>rəbbwi</i>
	drink.VN	wine	M-bad	at	God
	Drinking wine is bad in God's eyes. (2008-05-05/293)				

Yet, despite its complexity, the system appears nearly impervious to Arabic influence. As many of the forms above illustrate, eg *aḥajji* “to make pilgrimage” < Cl. Ar. *ḥajj-*, v.n. *ḥajj-*, or *abnu* “to build” < Cl. Ar. *banā*, v.n. *binā'*-, borrowed Arabic verbs form regular verbal nouns using Berber morphology, rather than using borrowed masdars. Arabic verbal nouns are occasionally found side by side with Berber ones, eg *ləmqaytət* “barter (n.)” (N2p19) vs. *aqayət* “to barter” (N2p160), *ləqmat* “swaddling” vs. *aqəmmət* “to swaddle” (N3p69); however, no verb has been found which can only take an Arabic verbal noun, and even for verbs that have both the Berber one is more frequently found. This may result from the functional differences between dialectal Arabic and Siwi verbal nouns.

Siwi, like other Berber languages (Naït-Zerrad 2001:98) and like Arabic (Owens 1984:128ff), uses non-finite forms post-verbally to emphasise the verb, and to fill

argument positions that would normally be filled by noun phrases, as already documented in Laoust (1931:69). However, in regional Arabic varieties, including Eastern Libyan (Owens 1984:142) and Egyptian (Abdel-Massih 2009:312), operator verbs are not described as selecting for non-finite clauses; the same holds true for most (all?) of northern Berber (Chaker 1983:410ff; Bentolila 1981:294ff; Kossmann 1997:247ff; Penchoen 1973:100). Yet Siwi, like Classical Arabic and Tuareg (Heath 2005a:683), allows infinitive clausal complements of control verbs such as “want” or “try”:

7.121 *xš-í-x* *azərrá-nnəs*
 want-PT-1S see.VN-3S Gen
 I want **to see him/her**. (2009-06-22/a)

7.122 *i-qás-a* *i* *tíwini* *ažubbar*
 3M-try-PT to **climb.VN** palm tree
 He tried to climb a palm tree. (2009-06-22/a)

7.123 *y-ug^wi-n-a* *af* *tíhi* *i* *ssih*
 3-refuse-P-PF on **go.VN** to thereabouts.DIST
 They refused **to go** there. (N1p189)

The ungrammaticality of Arabic verbal nouns in equivalent positions in dialectal Arabic may be what makes Siwis reluctant to borrow them, in contrast to other Berber languages without non-finite clauses such as Figuig (Kossmann 1997:163) or Tarifit (Lafkioui 2007:193), which allow some Arabic verbs to form their verbal nouns only using Arabic morphology.

Aside from the infinitive, Siwi has a second highly productive category of verbal noun: countable verbal nouns. These are formed by circumfixing feminine *ti-...-ət* (pl. *ti-...-a*, see Quantifiers) around the “aorist” root, dropping any initial or final vowels, eg *tītəglət* (N3p83) vs. *atgal* < *təgal* “to marry into” (N3p83); *tīylət* vs. *ayli* “to get expensive” < *yla* (N3p98); *tiggzət* vs. *aggaz* < *ggəz* “to go down” (2009-06-23/a). In some cases the

countable verbal noun includes a more specific meaning, eg *tiyalləbət* “riddle” vs. *ayalləb* “to pose a riddle” (N2p203). Numbers cannot directly modify verbs, and an important function of countable verbal nouns is to act as adverbs allowing the counting of actions:

7.124 *yə-nnət* *əjjət* *n* *tī-nətt-ət*
 3M-jump one.F GEN **CountVN-jump-Sg**
 He jumped once (jumped a single **jump**.) (2009-06-23/a)

7.125 *tláta* *n* *tī-nətt-á*
 three GEN **CountVN-jump-Pl**
 three **jumps** (2009-06-23/a)

7.126 *i-ḡəyyət* *əjjət* *n* *tī-ḡəyyət-ət* *yə-mmut*
 3M-cry one.F GEN **CountVN-cry-Sg** 3M-die
 He cried once (cried a single **cry**) and died. (2009-06-23/a)

The countable verbal noun is also used in contexts where a specific event is referred to:

7.127 *la* *stáns-ax* *tī-stáns-ət* *ta-t-ók*
 NEG stay up-1S **CountVN-stay up-Sg** MOD-DEM.F-2:M
 I've never had a late night like this **late night**. (Ar. ما سهرت سهرة مثل هذه السهرة.) (N3p116)

The high productivity of this form is reminiscent of Arabic, Classical, Eastern Libyan (Owens 1984:126) and Egyptian (Abdel-Massih 2009:306) alike, where concrete verbal nouns are most commonly based on the template CVCC-*a*. However, this phenomenon is probably a retention from proto-Berber: in Tamashek, one of the least Arabic-influenced Berber languages, many verbs distinguish between a temporally bounded or concrete feminine and an abstract masculine (Heath 2005a:507), although this appears much less prominent elsewhere in Berber (for Ait Seghrouchen Tamazight, Bentolila (1981:401) describes this contrast with gender change for only a single native verb,

uffuy “le fait de sortir” vs. *tufyt* “une sortie”; and for Kabyle, gender change appears not to be described as a relevant means of contrasting concrete and abstract verbal nouns, which in any case are not consistently distinct (Naït-Zerrad 2001:101).)

Non-finite subject participles have entirely disappeared from Siwi; see Relative clauses.

Less productive and less grammatically central, but interesting from a contact perspective, are the agent noun forms. There are rare traces of the pan-Afro-Asiatic (and Berber) agent/passive noun in *m-*; the clearest examples seem to involve Arabic roots, eg *aməkray*, pl. *məkraya* “hired worker” (N2p53) < *kru* “hire” (< Cl. Ar. *karā*), *aməyyaṭ* “quick to get angry” (2009-06-25/) < *ḡəyyaṭ* “anger (tr.)” (Cl. Ar. *ḡāḡ-*). Many Arabic agent nouns of the original form *CaCCāC* have been borrowed, usually with gender-appropriate Berber nominal markers attached, eg:

asərraq “thief” (N2p89) < Cl. Ar. *sarrāq-*, based on *saraq-* “steal”;
abənnay “builder” < *bannā’-*, based on *banā* “build”;
adəllal “broker” (N3p121) < *dallāl-* “broker”, based on *dall-* “guide”;
akəddab “liar” (N1p192) < *kaḡḡāb-*, based on *kaḡib-* “lie”;
aḡəllag “barber” (N2p220) < *ḡallāq-*, based on *ḡalaq-* “cut hair”;
aṭṭəbbax “cook” (N2p238) < *ṭabbāx-* < *ṭabax-* “cook (v.)”.

This also forms instrument names (usually in the feminine), eg:

takəmmaṣəṭ “pliers” (N3p117) < *kammāṣ-at-*, based on *kammaṣ-* “gather up”;
tasəmmaṣəṭ “earphone” < *sammāṣ-at-*, based on *samiṣ-* “hear” (N3p13);
lḡəllay “big kettle” (N1p26), based on *ḡalā* “boil” (others, N2p98.)

Occasionally both the verb and the noun are borrowed into Siwi, eg:

asuwwaq “driver” (N2p255) < *suq* “drive”;
aduwway “chatty guy” (N2p239, N3p50) < *dwi* “chat”;
aḡərraq “diver” < *ḡraq* “dive” (N2p191)

However, as elsewhere in Berber (Galand 2002:92), such forms are routinely borrowed independently of the corresponding Arabic form: *asərraq* “thief” bears no relation to *ukər* “steal”, nor *akəddab* “liar” to *ktər tałlaz* “lie”, nor *aħəllag* “barber” to *γərwəs* “cut hair”). This template is unproductive for most Arabic verbs in Siwi, but is occasionally applied to Berber verbs. Vycichl records the exception *adiyyaz* “poet/singer”; I recorded the apparently Berber *aṭəggal* “male in-law” vs. *ṭəggəl* “marry into” (N2p133) – probably a denominal verb rather than a deverbal noun – and *aγəllay* “wanderer” < *γləy* “wander” (N2p229), *anəzzay* “envious” < *nzay* “envy” (2008-04-19/1967), which might be regarded as special cases of the formation discussed below.

More productive – although still specific to a minority of verbs – is the interesting agent noun/adjectival form *a-CəCCeCi* / *a-CCeCi*. This is attested both with Arabic loans:

<i>ğdəb</i> “get angry” (< Ar. <i>γəḍib-</i>)	> <i>ağəḍḍəbi</i> “choleric person” (N3p51)
<i>jbər</i> “set (bone)”	> <i>ajübb^weri</i> “bone-setter” (N2p209)
<i>xəbbər</i> “inform, give news”	> <i>axübb^weri</i> “story-teller” (N3p51)
<i>kru</i> “hire”	> <i>akrawi</i> “hired labourer” (irregular) (2009-

06-19/a)

aṣəggəli “young strong farm-labourer” (< Ar. *zuqlah* “cudgel” - 2.3.1.2)

(N1p275)

and, more often, with Berber verbs:

<i>əčč</i> “eat”	> <i>aččəwi</i> “glutton” (N2p229)
<i>rwəl</i> “flee”	> <i>aruwweli</i> “flee-er” (N2p117, N3p51)
<i>jəll</i> “swear”	> <i>ajəllewi</i> “someone who swears a lot”

(N3p51)

lukk “get dirty” > *alukkəwi* “something that gets dirty easily” (N2p113)

siwəl “speak” > *asiweli* “chatty person” (N2p239)

kku “smell” > *akəkkəwi* “one with good sense of smell”

(N2p117)

dyəz “sing”> *adiyyezi* “singer” (N2p197)

As noted in Souag (2009), this form has no obvious Berber antecedent; the Arabic form *CaCCāl* + nisba *ī* provides the most promising etymology available. This form is attested sporadically in a number of dialects, but appears especially productive in the dialects of the Sudanic area, including eastern Sudanese (Reichmuth 1983:176), Chadian (Jullien de Pommerol 1999:37), and Nigerian (Owens 1993:80), in each of which this forms nouns of occupation (eg Nigerian *bayyáa'i* “seller”, *gannáaši* “hunter”, Chadian *haddâdi* “blacksmith”, *xayyâti* “tailor”, Sudanese *ḥaṭṭābi* “wood-gatherer”, *abbāli* “camel-herder”.) Since these dialects must originally have spread south from Egypt and Libya, it is plausible that this trait was once found further north, although at present such forms are not used anywhere nearby. The relative paucity of its use with Arabic verbs gives reason for pause; a common retention from Afroasiatic is hardly likely given its limited distribution in both Berber and Semitic (it is not noted in Lipiński (1997:219)), but given that the agent noun pattern *CaC:a:C* may be reconstructible for both families, coincidental parallel addition of an *-i* suffix, while unlikely, cannot be ruled out. However, a better explanation for its rarity with Arabic verbs may be the later replacement of Arabic nouns of profession by reflexes of un-suffixed *CaC:a:C*, currently used in all dialects of Arabic that Siwis are in regular contact with – a process that would not have affected Berber nouns formed in the same way.

7.4.2 Non-finite forms in Kwarandzyey

In southern Songhay, a preverbal infinitival morpheme *ká* is used for verbs following another main verb in serial/control constructions and verbal compounds (eg Heath 1999a:304), in contrast to verbal nouns which fill nominal positions. This morpheme has left no reflex in Kwarandzyey; its functions have been replaced by the finite subjunctive/irrealis marker *m*. No Northern Songhay language is reported to have a reflex of *ká*, so this loss probably dates back to proto-Northern Songhay. This brings it closer to Berber; in Moroccan Berber, serial/control clauses use finite irrealis forms,

while in Tamashek they use either finite forms or verbal nouns. However, it cannot be determined whether this is a contact-induced change or a retention: *ká* is nearly identical in form and function to Manding *kà* (Creissels 1981:311), and may be an early loanword into southern Songhay, although the tone differs.

In southern Songhay, the formation of verbal nouns is one of the few parts of the morphology showing significant, probably conservative, lexically specific irregularities: in Koyraboro Senni, for example (Heath 1999b:88), suffixes used for different verbs include *-i*, *-ni*, *-ri*, *-ey* (homophonous with the definite plural suffix), *-yan* (homophonous with the indefinite plural suffix), and unproductive *-rey*, *-mi*, *-ow*, *-uma*, \emptyset . In Koyra Chiini (Heath 1999a:63), the list has been only slightly reduced to *-ey*, *-rey*, *-ow*, and \emptyset , with traces of **-i*. In Benin Dendi, it may have been reduced even further; the plural suffix *-yò* is the only formative described for verbal nouns (Zima 1994:24). Northern Songhay in general has simplified the system only slightly less: Tasawaq and Tadasahak both normally use zero derivation for Songhay verbs, and tend to borrow Tuareg verbal nouns together with Tuareg verbs (Christiansen-Bolli 2010:106); Tasawaq also makes some use of *-yo* (homophonous with the plural suffix) for Songhay verbs, and retains one or two relics of **(n)i* (Kossmann 2003; 2007b).

In Kwarandzyey, the two main strategies surviving in Tasawaq – zero derivation, and plural marking – have merged; the best way to explain the syntax of Kwarandzyey verbal nouns is to take the deverbal noun to be the bare stem with a feature [+plural] added (see discussion under Number). In isolation, they appear with *=yu* directly suffixed (or its allomorph *=i* in appropriate syntactic positions); but as noted previously, this is separated from the stem by adjectives and lower numerals and disappears when the NP ends in a numeral or in *ha* “any”, just like other plural markers:

- 7.128 *g^wq=f^v* *hənnu=yu*
 sit=one *good=PL/VN*
 some good **sitting-down** (N6p62)

- 7.129 *ndza nʎa hɑ bɑ*
 if **eat** any EXIST
 if there's any **food** (N9p42)

The verbal noun is non-countable by default, but may be interpreted as countable in some cases (eg *kɑ* “hit (a blow)”, *nʎa* “eat (a food)”, *dzyəy* “speak (a word)”, *hyu* “smell”):

- 7.130 *i-bə-nʎa ɣɑr nʎa inʒɑ*
 3S-IMPF-eat just **eat three**
 They eat only **three foods**. (N6p108)

- 7.131 *ʒɑ-m-hən ʒɑ-m-kɑ-n kɑ=fu ʒɑ-m-f^vər-ni*
 1S-IRR-can 1S-IRR-hit-2S **hit=one** 1S-IRR-throw-2S
 I can knock you over with **one blow**. (N6p108)

A single argument of the verb may be included, marked with genitive *n*:

- Subj: *inəw n tʃɑ=yu*
 7.132 sun GEN rise=PL
 sunrise (N6p128)

- Obj: *ʃlaħəqqaš tərʃas n dzũɣ=i=hnən*
 7.133 because truffle GEN uproot=3P=good
 Because truffle-picking is great. (N6p133) (Arabism – “truffle” is normally *tsɑrʃəs*)

- Loc: *əlbləyda n dzũm=yu*
 7.134 Blida GEN plant=PL
 planting at Blida (2007-12-30/17)

However, efforts to elicit verbal nouns with more than one argument attached were

completely unsuccessful, and such constructions are probably to be considered ungrammatical (N5p231).

Verbal nouns are used to fill nominal positions, eg:

7.135 *an sku=yu ħar məzwəq wara ana*
 2SGen **be caught=PL** like warbler sp. even 3S
 The way it is caught too is like the warbler-bird. (2008-01-01/05)

7.136 *bəṣṣəħ an sku=i-ggəb*
 but **3SGen be caught=3P-difficult**
 But catching it is hard! (2008-01-01/05)

They do not substitute for the complement clauses of operator verbs.

=*yu* is productive for Arabic and Berber as well as Songhay words: *yərəħ=yu* “setting (of celestial body)”, *iħaža=yu* “telling stories” (2008-02-05/17), *bəṛbəz=fũ* *kədda=i=bə=a.tsa* “there is a little patchiness on it” (2008-01-01/05), *an yəħla=yu ħar ləṣəl* “its sweetness is like honey” (2008-01-01/08). However, a number of Arabic verbal nouns have also been noted, mainly based on the pattern *ləCCaCəts*:

Table 86.

<i>ləwnəst</i> “socialising”	<	<i>wənnəs</i> “socialise” (N7p)
<i>ləħlawəts</i> “sweetness”	<	<i>yəħla</i> “be sweet” (cp. <i>yəħla=yu</i>)
<i>ləfləħəts</i> “farming”	<	<i>fəllaħ</i> “farm” (2007-12-06/AM)
(cp. <i>ləħkayəts</i> “tale”	<	<i>(y)iħka</i> “tell a story”)

but occasionally on other patterns:

<i>ləxədməts</i> “work”	<	<i>(y)ixdəm</i> “work”
<i>ləħrit</i> “ploughing”	<	<i>yəħrət</i> “plough” (2008-01-01/05)
<i>ləglib</i> “earth-turning”	<	<i>gəlləb</i> “turn (earth)” (2007-12-

30/17)

nnhīra “throat-cutting (eg camel)” < *yənḥəṛ* “cut the throat” (N9p33)

The following case is derived from a nominal adjective:

xḍuriyyət “greenness” (2008-01-01/05) < *(lə)xḍəṛ* “green”

These are probably to be regarded as individual borrowings rather than as a productive formation within Kwarandzyey, but universal bilingualism makes that a moot point.

Their use in parallel with =*yu* verbal nouns suggests that they can be treated as the same category:

7.137 *ʕa-b-ʕalləm* **afag** *n* **həw=yu...** *ʕa-b-ʕalləm* **lglib**
 1S-IMPF-learn **palm-fence** GEN **tie=PL** 1S-IMPF-learn **earth-turning**
 I'd learn **fence-tying**... I'd learn **earth-turning**. (2007-12-30/17)

However, these seem to be grammatically singular:

7.138 *an* *lxədmət* **a-ggəb**.
 3SGen work **3S-hard**
 Its work is hard. (2007-11-15/05)

Only one Berber verbal noun has been observed, but it shows a regularisation that suggests that the pattern was once more productive (in most of Berber, including every Berber language in a position to have affected Kwarandzyey, the verbal noun *fad* “thirst” lacks the *a-* prefix that native masculine singular nouns normally display):

afəd “thirst” *ffəd* “be thirsty” (N7p)

The Songhay “characteristic nominal” formation in *-kʷəy* (cp. Tasawaq *-kóy* (Wolff & Alidou 2001:544), KC *-koy* (Heath 1999a:66)) remains highly productive for nouns in reference to people (eg *zman-kʷəy=yu* “people of the old days” < *zman* “old days”, *gə-kʷəy=yu* “family members” < *gə* “house”, *ʕbaḍla-kʷəy=yu* “people from Abadla”), but

is not recorded with verbs in my data. Traditional oasis society had relatively little room for occupational specialisation, and words referring to occupations are consistently Arabic loans, often with no relationship to corresponding verbs, eg *ləmʕalləm* “smith”, *ssarəq* “thief” (cp. *zəy* “steal”), *lmuʕallim* “teacher” (cp. *ʕalləm / tsyu* “learn”, *tsyundza* “teach”), *ttəlab* “religiously trained person”. Just fifty years ago *-kʷəy* was still productive with verbs – Champault (n.p., pp. 38, 73) recorded forms like *<iyeda kui>* “circonciseur” (*<yəhɔɔ<* “circumcise”), *<zənza kui>* “commerçant” (*<zənza* “sell”). However, I have been unable to confirm these. Other Songhay characteristic nominal formants such as *-koyni* and *-kom* have left no trace.

Across Songhay, instrumental nouns using the unproductive endings **-irgi / -gi* are found, eg KS *haabirji* “broom” *< haabu* “sweep” (Heath 1999b:98). These have no counterpart in Kwarandzyey. A few Berber instrumental nouns have been borrowed together with corresponding verbs, using the general deverbal prefix *m* plus the Berber nominal affixes *a-/tsa-..[-t]*:

<i>aməsmə</i> “nail (n.)	<	<i>smə</i> “nail (v.)”
<i>tsamşərrəft</i> “zipper”	<	<i>şərrəf</i> “zip” (N9p41)

or the specifically instrumental *s*:

<i>(ts)asəkʷmʷəš</i> “bundle, pack”	<	<i>kʷmʷəš</i> “tie (parcel)” (N7p)
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In one case, the relevant form has clearly come from the Arabic agent noun template CaCCāC via Berber:

<i>tsaməllaht</i> “tool used for smoothing land”	<	<i>məlləh</i> “smooth (v.) land”
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None of these forms are productive.

A number of other nominalisation patterns have emerged. There is a sporadic, unproductive correspondence between nouns in *-u* and verbs without *-u*, eg *guzu* “ditch”

(cf. *g^wəz* “dig”), *funu* “hole” (cf. *f^wən* “pierce, make hole”), *tazu* “couscous, dinner” (cf. *təz* “dine, have dinner”); all cases are of Songhay origin, and most seem to result from the loss of *-u* in the verb. Other borrowed noun-verb pairs that are historically derivationally related include:

Table 87.

Arabic:

<i>laxwa</i> “gap, empty spot”	<i>yaxwa</i> “be empty”
<i>ššut</i> “draught”	<i>išut</i> “blow” (N8p107; ultimately Berber)

Berber (sometimes ultimately Arabic):

<i>tsanəqqəd</i> “spot”	<i>nəqqət</i> “make/be a dot” (N7p)
<i>tsafəsfəs</i> “zorilla”	<i>fəsfəs</i> “stink” (like a zorilla)
<i>am[a]tsəkk^wər</i> “dear friend”	<i>tsəkk^wər</i> “reconcile” (N7p)
<i>asamər</i> “sunny spot”	<i>səmmər</i> “be in sunlight”
<i>agǔmm^wün</i> “seed-bed”	<i>tsgǔmm^wün/sgǔmm^wün</i> “prepare seed-beds”
<i>iwəγ</i> “not quite ripe dates (Aug)”	<i>siwəγ</i> “turn yellow (of dates)” (N8p102)
<i>ašənšə, išənšə[rə]n</i> “snot”	<i>ssənšə</i> “blow one's nose” (N7p)

As the differences in the semantics and morphology of these relationships suggest, none of these forms is productive either.

The Soninke-like participial ending *-nte* of southern Songhay (see also 3.1.3) has no counterpart in Kwarandzyey, productive or otherwise.

7.5 Non-verbal predication

Adjectival predication has been addressed under Adjectives, and will not be discussed here. In Classical Arabic, existential predication is handled with the locative *hunāka* “there” or the passive verb *y-ūjad-* “it is found”; nominal and prepositional predication is handled with simple juxtaposition in a present stative sense, and with the verb *kān-* “be/become” otherwise. Most colloquial varieties have developed new strategies for existential predication – *fī(-h)* “in(-3M)” in the east, *kayən* “be-PF” in Algeria and

Morocco. In Berber, existential predication typically uses the verb *ili*, while nominal predication is handled with a particle *d* before the predicate. Songhay uses reflexes of *bara/goro* for existential predication, and handles nominal predication with *čī* before the predicate (etc.) or *no/nono* (etc.) after it. Siwi seems to have moved closer to the Arabic model through calquing, while Kwarandzyey shows possible calques from both Arabic and Berber; both have also borrowed verbs whose usage includes, but is not limited to, serving as semantically empty supports for non-verbal predication.

7.5.1 Siwi

My observations agree with the description in Vycichl (2005). Existential predication in Siwi is handled with the particle *di(y)*, invariant for tense/aspect/mood and for subject; *diyya* is also attested.

7.139	<i>dí</i>	<i>ħədd</i>	<i>i-wəddr-ás-a</i>	<i>izít...</i>
	EXIST	someone	3M-lose-3SDat-PF	donkey...
	There is someone who has lost a donkey... (2008-04-27/227)			

This word is unrelated to the common Berber existential verb *ili*, which is instead reflected in the locative predicator discussed below. In regional Arabic, the similarly invariant existential particle is *fī* “in” or *fih* “in-3M”; it seems probable that *di* is a calque on the former. The modern Siwi for “in” is *g* (*gd-* with pronominal suffixes), but this derives from **dāg*, cp. El-Fogaha *dāg*, Nafusi *dī*, and the existential is *dāg-es* “in-3S” in El-Fogaha, *dī-s* “in-3S” in Nafusi and Zuwara, all probable calques on Arabic (cp. Mitchell 2009:121). The change of *g* to *y* is unusual in Siwi but sporadically attested, eg *yəttus* “cat” (cp. Libyan Arabic *gattus*.) The unrelated existential marker *gān* of Awjila also appears to be relatable to a locative preposition (Paradisi compares it to Siwi *gən* “chez”.) *di* might, alternatively, be an irregular shortening of the m. sg. locative predicator *dilla*, below.

Locative predication in Siwi is handled with m. *dilla*, f. *ttəlla*, pl. *dillan*, invariant for tense/aspect/mood/perfect:

- 7.140 *ággwid wən márra dí-lla g əssájən d yúsəf*
 man M.REL once **M-be at** in prison with Joseph
 The man who had **been** in prison with Joseph... (2008-08-03/248)

This obviously derives from pan-Berber *y-əlla / t-əlla / lla-n* “3M/F/MPI-exist”, plus an element *d* probably derived from a locative demonstrative particle; compare the originally proximal stem *da* in the locative demonstratives (eg *gda* “here”), and the directional suffix **-d* “hither” (see Directional affixes). The loss of person agreement is noteworthy, but not obviously contact-related.

Nominal and non-locative prepositional phrases serving as predicates are simply juxtaposed after the subject/topic:

- 7.141 *wihin smiyt-ənnəs izít*
 M.DEM.DISTname-3SGen donkey
 That, its name is “donkey”. (2008-04-17/189)

- 7.142 *əljəmət ərrahát, d níčni nxəddəm.*
 Friday rest and we 1P-work.INT
 Friday is (for) rest, yet we are working. (2008-04-27/224)

This parallels Arabic, and contrasts with most Berber languages; in neighbouring Awjila, Ghadames (Lanfry 1973:s.v. D), Figuig, Kabyle, and northern Berber in general, a particle *d* is used to mark nominal predicates. Even in Zenaga, *əd* is used in nominal predication (Nicolas 1953:57), although Taine-Cheikh (2008a:s.v. D) seems to analyse it (*äd* in her transcription) primarily as a demonstrative. However, El-Fogaha, Nafusi, and Tuareg (Galand 1974:23) also use direct juxtaposition; and calquing off Arabic is implausible in the case of Tuareg. Thus, while the juxtaposition strategy in Siwi may be a calque off Arabic, it may simply be a retention.

When aspect/mood is to be expressed on non-verbal predicates, or when an inchoative

meaning is intended, *ɣmar* “do/be/become” is used as a copula-like dummy verb, paralleling the use of *g* “do/be” as a copula in many Berber languages:

7.143 *mɣbál ge-yə-ɣmár ənnbí*

before **IRR-3M-do** prophet.

before he was a prophet (2008-08-03/246)

7.144 *mak yə-ɣmar ɣur-əs arən*

when **3M-do** at-3S flour

When it **has** “flour” (pollen)... (2008-04-12/162)

7.145 *yə-ffáy-a ya-ɣmár n-áqlab n ləxmar n əssúltān*

3M-go out-PF **3M-do** GEN-turn.VN GEN wine GEN king

He got out (of prison) and **became** the king's cup-bearer. (2008-08-03/248)

Tense, if necessary, is expressed with temporal deictic adverbs, as illustrated with *maɣra* “once” above.

Most Berber languages – including Tuareg, Tashelhiyt, Kabyle, Tuzabt, Zenaga – have several predicators (eg Kabyle *ulaš* “there is no”, *isəm* “what is the name of?”, Tuareg *aba* “there is no”, Tuzabt *man-* “which?”) that take pronominal object suffixes with reference to the “subject” of the predication (Aikhenvald 1995), eg Kabyle *ulaš-it* (NEG.EXIST-3MSgObj) “it/he isn't there”, Tuzabt *man-tən* (which-3MPIObj) “which ones [are they]?”; these have been calqued into Maghrebi Arabic, eg Algerian *makaš-u* (same gloss, same meaning.) Siwi has no such predicators, making it more similar to Arabic. (Aikhenvald suggests that a fossilised remnant of one may be preserved in Siwi in the *-et* (=3FSg) ending of *mnet* “how many?” (transcription corrected), corresponding to Sokna *menit*, but Laoust's derivation of this word from a form like Tamasheq *man-iket* is more plausible.) The widespread distribution of this construction suggests an early, probably proto-Berber development; both Aikhenvald and Satzinger (2005) argue that its roots can be traced even further back, to proto-Afro-Asiatic. However, the absence of such predicators is shared by Siwi with Awjila, Sokna, and El-Fogaha, like

so many of its other syntactic similarities to Arabic, making it hard to be certain whether it occurred under recent Arabic influence or at an earlier stage.

7.5.2 Kwarandzyey

In Kwarandzyey, existential and locative predication are handled with *bq* < pan-Songhay *bara*, whose non-use of TAM morphemes was noted above, eg:

- 7.146 *məndz=ka* *q-bq?*
 where=LOC **3S-EXIST**
 Where **is it?** (2007-12-06/AM)

A nominal or non-locative prepositional phrase used predicatively can simply be juxtaposed following the predicate:

- 7.147 *uy=hənn.u* *išan=wini*
 REL=good.ADJ ovine=G2
 The best one is goats' (milk). (2007-11-15/05)

- 7.148 *uyudz=yu* *msabiḥ*
 DEM.ANA=PL Orion's Belt
 Those are Orion's Belt. (2007-12-21/33)

However, often an identificational demonstrative (see Demonstratives) or pronoun is used, placed after the noun phrase:

- 7.149 *əlyəbət=f^w* *ana?*
 oasis=one **3S**
 Is **it** an oasis? (2007-12-06/AM)

- 7.150 *ləmsabiḥ* *ʕar* *inza* *ini*
 Orion's Belt just three **3P**

Orion's Belt **are** just three (stars). (2007-12-21/33)

Neither construction reflects the pan-Songhay norm, where a verb-like equational particle “X is Y”: X *či* Y (KC *či*, KS *ti*, TSK *kí*) is used alongside an identificational construction “it is Y”: Y *no* (KS *no*, KC *nono*). Instead, the former mirrors Arabic, where subject-initial juxtaposition is the default strategy for nominal predication, while the latter's parallels with Moroccan Berber were discussed under Demonstratives.

Inchoative nominal predication is expressed with *yər* “become, return, do again”, eg:

7.151 *i-mm-iŕžn-ana* *a-m-yər* *əlŕžin*.
 3P-IRR-knead-3S 3S-IRR-**become** dough
 They knead it and it **becomes** dough. (2008-02-05/11)

yər shares the meanings “return, do again” with the rest of Songhay, but the “become” meaning is unprecedented: DC *yee* “return, go back; do again”, *yeer* “vomit”; KS *yee* “return; do again”, *yeti* “take back, return (sth)”, *yeri* “vomit; bring back, return”; TSK *yé*: “go back, return”, *yé:ri* “vomit”, *yétân* “bring or take back”, *yé/yé* “do again”; Zarma (Bernard & White-Kaba 1994) *yé* “revenir, de nouveau”, *yéeri* “vomir”, *yèti* “ramener, remettre à sa place, renvoyer”; Tasawaq (Kossmann 2003) *yát* “retourner”, *yár* “vomir”, *yèzi* “rendre, répondre”; Tadaksahak *yé:d* “return”, *yékkat* “come back”. Given its distribution, this is most easily explained as a semantic calque from Maghrebi Arabic *walli* “become, return” and/or Berber, cp. Ait Atta (Amaniss 1980) *uyul* “revenir, retourner...; devenir”, Tarifit (Lafkioui 2007:196) *tadawla* etc. “devenir, retourner”, Kabyle (Dallet 1982) *qqʷəl* “devenir...; revenir” – although the grammaticalisation itself is presumably natural; cp. Hausa *koomàa* “become, end up” or “return” (Jaggar 2001:428).

The Arabic loanword *ikun* “be/exist (as a rule)” occurs in contrastive distribution with *bə* and with the nominal predication constructions through juxtaposition; it is used to assert a predicate's truth as a general rule without asserting a specific instance.

7.152 *fəɾtutu* **a-b-ikun** *tsaɣas=tsa* - *rɾbiɕ=tsa* *tsəqriban*
 swift/swallow **3S-IMPF-be** winter=LOC spring=LOC approximately
 The swift/swallow **is around** in winter – almost in spring. (2008-01-01/05)

7.153 *aha* *afyət*, *lhəɾɾ*, **a-b-ikun** *fōnsi* *šwəy*
 as for other free **3S-IMPF-be** dark a little
 As for the other one, the “free” (male woodchat shrike[?]), **it tends to be** a bit
 dark. (2008-01-01/05)

Especially with verbal predicates, this sometimes shades into an evidential sense, implying that, given the circumstances, the event in question will be found to hold as a general rule, despite the possibility of exceptions:

7.154 *an* *lmaɕna* *bəɣni* **a-mm-ikun** *ɑ-kkɑ. xūdz* *bəɣn* **a-ikun** *ɑ-kkɑ*,
 3SGen meaning rain 3S-IRR-**be** 3S-fall. when rain 3S-**be** 3S-fall
alfəllah *a-m-ka...*
 farmer 3S-IRR-come...

Its meaning (moist earth) is that rain **must/would have** fallen. (**In general**), when rain has fallen, the farmer would come... (2008-01-01/08)

Both usages correspond to the usage of imperfective *kun* in local Arabic; in the perfective, the contrast between *kun* and \emptyset is unavailable.

7.6 Negation

7.6.1 Siwi negation

7.6.1.1 Negators

Siwi has three negators: *qačči/ačči*, used for nominal predicates and focused elements; *ula* “no”, used as a pro-sentential interjection; and *la*, used productively in all other contexts.

la was classed by Laoust (1931:265) as a loanword from the Arabic imperative / nominal / prosentential / subjunctive / (Classical only) imperfective negator *lā*, a position defended by Souag (2009). It has been used in Siwi for at least the past two centuries – Minutoli (1827:362) gives “don't come!” *la tasəd* لا تجئ = لا تأسد – but it is completely isolated in this function within Berber: verbal negation is handled in most languages by reflexes of preverbal **wǎr*, often reinforced by a postverbal particle typically derived from a word meaning “thing”. Chaker (1996) suggests evidence for deriving it from a verb along the lines of central Moroccan *ar* “to be empty”; however, Lipiński (1997:464) plausibly takes it to be cognate with the Semitic negator represented by Akkadian *ul / ula*, Hebrew *'al*, Amharic *al-*, etc., with no Arabic reflex, in which case it must date back at least to before the separation of Berber and Semitic. A couple of eastern Berber languages show reflexes of a second preverbal negator with a *k*: Ghadames has prohibitive *wǎl*, but otherwise uses *ak* (perfect/future); in El-Fogaha the negator is *nk*, prohibitive *bak*. A source for this must have been present in Siwi at some stage, but is an even less likely source for *la* than **wǎr*.

Looking beyond verbal negation, however, complicates the situation. Siwi *ula* means pro-sentential “no” (cp. Awjila *wélā* “no” (Paradisi 1961:81)); nominal negation “not even” is normally *la*, eg *la šra* “nothing”. However, in one fixed idiom that has come to my attention since writing Souag (2009), *ula* is used to negate a nominal: *af ula ḥḥila* (on no thing) “for no reason”. This suggests that *la*, at least in the context of nominal negation, derives from a shortening of the element *ula* “(not) even” (Tamasheq *wāla*) used with noun phrases in a number of Berber languages: thus eg Tumzabt *ula d šra* “nothing = (not even) COP thing”. *ula* is itself commonly taken to be an Arabic borrowing (Dallet 1982), from the common Egyptian/Middle Eastern form *wa-lā* “not even”; however, if this is the case it must be among the very earliest ones, given its wide distribution and attestation in Tamasheq. A derivation of *la* from *ula* appears compelling for nominal negation – but *ula* is not reported to be used preverbally, in Siwi or elsewhere (with the possible exception of oath negation in Zuaran (Mitchell 2009:106), if Mitchell's Arabic etymology is rejected: *wəllāhi (w)lā...*), and the loss of *u* is irregular. This suggests the possibility of a double etymology: the Siwi nominal

negator *ula* was equated with the Arabic nominal / verbal / prosentential negator *lā*, as part of the broader Arabisation of the negation system described below, and irregularly both lost its *u* and expanded its functions to increase its phonetic and semantic similarity with the Arabic model. In effect, Siwi *la* derives from both languages, an unusual but attested phenomenon, while *ula* preserves the Berber form.

qačči / 'ačči “it is not” has no plausible Berber etymology, and its initial non-geminate *q* makes it unlikely to be of Berber origin. Instead, as argued in Souag (2009), it most likely derives from Arabic *qatt* “not at all, never” plus Arabic *šay'* “thing” - a combination whose reflexes are attested, with the meaning “nothing”, in several peripheral Arabic dialects isolated from one another and in two cases from any other Arabic-speaking communities, forcing it to be reconstructed for a fairly early stage of post-classical Arabic: Bukhara *kaččiš* (Axvlediani 1985:93), Kormakiti (Cyprus) *kičš* (Borg 2004:389), Kindērib (Mesopotamia) *qətt šīya* “nothing” (Jastrow 2005). The semantic shift from “nothing” to “it is not” parallels the shift from nominal “(not) even” to the general negator “not” discussed above, and may be compared to Hausa *baabu* < **baa* NEG+ *abu* “thing” (Skinner 1996). No present-day Arabic dialect of Egypt or Libya is reported to have preserved *qatt*, much less *qačči* (Jastrow pc); the fact that Siwi has both (Siwi *qətt* is a negative polarity adverb “ever, at all”) is one of the stronger arguments for far-reaching Arabic influence on Siwi having begun quite early on. The variation between *q* and ' in this word is unique to this word within Siwi, and has not been noted in earlier sources; it brings to mind the common Egyptian Arabic pronunciation of *q* as '.

7.6.1.2 Syntax

Siwi verbal negation has almost no effects on verbal morphology. Any non-imperative verb is negated by placing *la* immediately before the verbal word, with no changes in stem form or stem choice (except the occasional contraction of *la ga...* to *la...*), eg:

“Aorist”:

- 7.155 *g rǎbbʷi niš la ga-ššy-ax gəd-wən ɣer wənn ...*
 in God I NEG IRR-take-1S in-2P except REL.M/P
 By God **I won't take** anyone among you except the one that... (2008-08-03/250)

“Perfect”

- 7.156 *lá n-usəd ɣer baʕd-inni nə-ssən šəkk aggʷid jayyid*
 NEG 1P-come except after-COMP 1P-know you.M man good
 We did not come until we knew that you were a good man. (2008-08-03/250)

“Intensive”:

- 7.157 *niš lá ttǎčč-ax náčču ɣúr-əs afǎlfəl qǎtt*
 I NEG eat.INT-1S food at-3S pepper at all
I don't eat food with pepper in it at all. (2009-06-25/a)

This is unusual for Berber, where negation usually affects stem selection. In most varieties, when a negator is present, the “perfect” is replaced with a “negative perfect”, based on the perfect stem with infixation of or ablaut to *i*. In many varieties, the “intensive” is replaced with a “negative intensive”, formed similarly; this is probably to be reconstructed for proto-Berber (Kossmann 1989). In much of northern Berber, though not in Tashelhiyt nor Tuareg, the “aorist” is replaced in the negative with the corresponding “imperfect” (Chaker 1996). However, Siwi has no surviving specifically negative verb stem forms, and allows the “aorist” to combine freely with negation (except in the imperative, below.) The same appears to be true of both El-Fogaha¹⁴ (Paradisi 1963) and Awjila¹⁵ (Paradisi 1961). The distribution of the feature suggests that the negative stem was already absent in the last common ancestor of at least Siwi and El-Fogaha, but parallel development under intense Arabic influence cannot be excluded: the loss of the negative stem forms, and the narrowing of the “imperfect” stem's distribution in the negative if this was originally present, can both be regarded as

14 At least in the “perfect” and “aorist” (no negations of the “intensive” have been noted in the data): compare in the “aorist” *a-y-ug-ít d ā-ī-wát-ček* “la prenderà e ti bastonerà” (he will take it and hit you) with its negation *nk-a-y-ug-ít d nk-ā-ī-wát-ček* “non la prenderà e non ti bastonerà”, and in the “perfect” *ssénaġ* (I know) with *nk-essénaġ* “non so” (I don't know), where other varieties would contrast a “positive perfect” stem *ssən* with a “negative perfect” stem *-ssin-*.

15 Eg *a-ug-áh-tenet-ká* “non le prenderò”/I will not take them (Paradisi 1961:81).

calques off Arabic. In all modern varieties of Arabic, the form of the verb is independent of negation, with the sole exception of the imperative, which when negated is replaced by the corresponding “imperfect” conjugation.

In Siwi, negative imperatives substitute the “intensive” stem for the “aorist” used in the positive:

7.158 *la taš-as əssərr i ħədd*
 NEG give.INT-3SDat secret to anyone
Don't give a secret to anyone.

7.159 *lá xəbbaṛ-ásən lámnam wənn əryi-t dá-w-ok*
 NEG tell.INT-3PDat dream REL.M dream-2S+3MObj MOD-DEM.M-2:M
y itma-k
 to brothers-2S
 Don't tell your brothers that dream that you dreamt. (2008-08-03/246)

Negative imperatives are typically imperfective anyway, since the state of refraining from an action usually extends over a span of time. However, although perfective negative imperatives are semantically possible, negative imperatives formed with the “aorist/perfect” stem are consistently rejected (2010-01-14, 2009-12-31).

In almost all Berber languages for which adequate data is available, including the easterly ones Nafusi (Beguinot 1942:94), Ghadames (Lanfry 1973), and Awjila (eg *tneššít-ká* “non dormire” (Paradisi 1960:165)), the imperfective stem is used with negative imperatives; for many, in fact, all irrealis forms are negated with the imperfective stem, making the treatment of imperatives consistent rather than exceptional. El-Fogaha (Paradisi 1963) uses the “aorist”, eg *bâk a-té-mžer-em* “non mietete” (don't reap), but this is presumably a calque off Arabic, unsurprising since the language was nearly extinct when documented. In Siwi it is therefore a retention.

la also negates existential, locative, *γur-*, and adjectival predicates, again with no

morphological effects:

7.160 *y-if-a* *ájjən árrəbʕilá* *di-lla*
 3M-find-PT one kid **NEG M-be at**
 He found that one (goat) kid **was not there**. (2002-03-18/Tamza)

7.161 *səbʕat-snín* *lá* *di* *xér-ənnəs*
 seven-years **NEG EXIST** better-3SGen
 seven years than which **there is not** anything better (2009-07-01/b)

7.162 *lá* *ɣur-əs əlfaydət*
NEG at-3S benefit
He did not have any worth. (2002-03-18/Two Boys)

7.163 *tikəlt-ənnəs* *lá* *t-kwayyəs-t*
 walk.VN-3SGen **NEG F-good-F**
 His way of walking **is not good**. (2009-06-23/a)

Apart from predicates, *la* may be placed before NPs as a negative existential quantifier:

7.164 *lá* *if-əx-t* *lá* *amkan*
NEG find-1S-3MObj **NEG** place
 I didn't find him **anywhere**. (2009-06-22/a)

Such variables are more commonly left unmarked or marked with the focus particle *ħatta* (see Information structure.) However, if the NP precedes the verb, *la* appears to be obligatory.

qačči/'ačči precedes the predicate, irrespective of type:

7.165 *mámək ga-n-úkəl* *g* *šal* *'ačči* *šal-ənnax?*
 how IRR-1P-walk in country **NEG.COP** country-1SGen

How (why) would we go to a country which **is not** our country? (2008-08-03/250)

7.166 *ulá, 'účči* *γur-i tazáxt, γúr-i takǔhkúht*
 no **NEG.FOC** at-1S fever at-1S cough
 No, **it's not** that I have a fever, I have a cough. (2009-06-28/a)

7.167 *zr-əm ləkwast-ónni:s* *'účči* *umṁ^{wi}-γ-áwən* *ya*
 see-2P beauty-3SGen **NEG.FOC** say-1S-2SDat huh
 You see his beauty? – **didn't** I tell you, huh? (2008-08-03/247)

In all cases it precedes the negated item, an order typical of Berber and Arabic alike.
 For nominal negation, see Variables.

7.6.2 Kwarandzyey negation

Kwarandzyey negation shows no signs of direct borrowing, but appears to have undergone pervasive calquing off Berber. Kwarandzyey TAM particles and auxiliaries are negated as follows:

Table 88.

Indicative:

Positive	Negative	
Ø (C)	<i>s</i> (C)	relative past indicative perfective / optative
<i>ba</i> (C)	<i>sba/ssa</i> (C)	perfect
<i>b</i>	<i>sb</i>	imperfective
<i>bab</i>	<i>ssab</i>	progressive

Non-indicative:

<i>m</i>	<i>sb</i>	subjunctive/irrealis
Ø / <i>wə-</i>	<i>sb</i>	imperative
<i>adm-</i>	<i>ams-</i>	divine agency optative

Auxiliaries:

<i>baɣam</i>	<i>sbaɣam / ssaɣam</i>	future
<i>g^wab</i>	<i>sg^wab</i>	inceptive

Verb-like elements that do not take auxiliaries or most MAN markers:

<i>bə</i>	<i>sbə</i>	existential
<i>bəɣ</i>	<i>sbəɣ</i>	desiderative

Examples:

Past perfective:

7.168	<i>nə-ddzūm</i>	<i>haya</i>	<i>nə-s-ddzūm</i>	<i>haya</i>
	2S-sow	anything	2S-NEG-sow	anything

Did you sow anything, or **not sow** anything? (2008-02-05/17)

Optative:

7.169	<i>nɔɔr</i>	<i>nə-s-yər-tsi</i>
	OPT	2S-NEG-return-hither
	May you not return .	

Imperfective:

7.170	<i>wəh, la</i>	<i>a-s-b-dza</i>	<i>lməswak</i>	<i>a-səb-dza</i>	<i>tazzart...</i>
	yeah, no	3S-NEG-IMPF-do	siwak	3S-NEG-IMPF-do	kohl

Yeah, no **he/she doesn't use** a siwak (traditional toothbrush), **doesn't put on** kohl, ... (2008-01-19/07)

Perfect:

7.171	<i>agga xəms-iyyam aɣudzi wəlla sətta, i-s-ba-nnən,</i>	<i>ɣa-nnən-dz-ini</i>
	PAST five-days ID.ANA or six	3P-NEG-PF-drink 1S-drink-CAUS-3PEmph
	For the past five or six days they hadn't drunk (ie been watered), I irrigated them. (2008-01-st/T)	

Progressive:

- 7.172 *a-s-sab-ihəzz* *an* *bənyu*
3S-NEG-PROG-shake 3S.Gen head
He's not shaking his head. (2007-12-22/11)

Subjunctive/Irrealis:

- 7.173 *a-m-bəy* *xlaʃ*, *a-s-b-hur-ts* *kʷara=si*
 3S-IRR-know finished **3S-NEG-IMPF-enter-hither** village=DAT
 He would know it's finished, **he would not go** into the village/Kwara. (2007-12-21/33)

Imperative:

- 7.174 *!!a-yəʃfərlək*, *nə-s-b-gum*
 God forgive you, **2S-NEG-IMPF-swear**
 God forgive you, **don't swear**. (2008-02-05/17)

Divine agency optative:

- 7.175 *aməs-gəw-ni*
 DIV.OPT-help-2S
 May God not help you.

Future:

- 7.176 *mən ə-*, *nə-s-baʃam-bay-ini*
 from uh **2S-NEG-FUT-know-3P**
 From – uh – **you won't know them**. (2007-12-06/AM)

Inceptive:

- 7.177 *məʃyu a-s-gʷab-bəy-bəy* *nən* [inaud]
 thus **3S-NEG-INCEPT-break-REDUP** 2SGen ??
 That way **it doesn't start breaking** your [inaudible] (2007-12-30/17)

Existential:

7.178 *əgga həybbu n ba (a)-s-ba walu*
 PAST many GEN people 3S-NEG-EXIST no
 There weren't many people, no. (2007-12-30/17)

This can be summarised as a language with a single sentential negator *s*, placed after subject agreement and before the TAM particle, plus a couple of simple rules: non-indicative forms (excluding the optative, which is a special usage of the perfective) are replaced by the imperfective when negated; the evanescent *b* of *ba/bab/baɣam* may be replaced by gemination (almost obligatorily in the case of *bab*). *s* is obviously derived from the pan-Songhay morpheme reflected in Koyra Chiini perfective negator *si*, etc. However – as observed by Kossmann (2004a) – this represents a striking simplification in comparison with other Songhay languages, mainstream and Northern alike, where mood, aspect, and negation are usually jointly expressed by single portmanteau morphemes: thus KC, for example, has *si* for imperfective negation, *ma si* for subjunctive/imperative negation, and *na* for perfective negation. This separation of negation from TAM marking brings Kwarandzyey closer to the model of both Arabic and Berber; yet, given that negation in Kwarandzyey comes between subject agreement and MAN marking, whereas negation in Arabic and Berber precedes both, this can scarcely be labelled a calque.

Apart from the TAM morphemes listed above, there are two important negative polarity morphemes that participate in the TAM complex: *k* “ever again, any more”, *kūm* “yet”. The former is imperfective; the latter, perfective. These are in complementary distribution with other core MAN morphemes such as *b* and *m*, but can be preceded by *ba* and *baɣam*. They must be licensed by negation (whether within the verb or at a higher level in the clause, eg by negative verbs such as “refuse” or by the oath negator *ndza*), by interrogation, or, in the case of *kūm*, by *qbəl* or *gəddam* “before”. Examples:

“any more”:

7.179 *nɗər a-s-k-həy!*
 OPT 3S-NEG-anymore-bear

May it (the sparrow) bear no more (young)! (2008-01-01/05)

7.180 *a-wwən* *a-kə-dri*
 3S-refuse 3S-anymore-go
 It refuses to **go any more** (it's stopped working) (N8p)

7.181 *ʕa-s-ba-kə-ddər* *küll*
 1S-NEG-PROG-anymore-go all
 ما نزيدش نروح قاع
I don't go any more at all. (N6p66)

“yet”:

7.182 *madam* *ʔtsa=dz* *a-s-kūm-yərah,* *a-m-hur-tsi*
 as long as star=ANA 3S-NEG-yet-set, 3S-IRR-enter-hither
 As long as that star **has not yet set**, he would go in. (2007-12-21/33)

7.183 *gəddam* *ʕa-kkūm-dər* *alkərti,* *ʕa-nnən-ndza* *ləmbu*
 before 1S-yet-go town 1S-drink-CAUS garden
 Before **I went** to town, I watered the garden. (2008-01-03/06)

The etymology of these items is difficult. An appropriate comparison for *k* might be Songhay *koyne* (KS) “again”, with irregular shortening. For *kūm*, one might speculatively link it with Songhay **gina* “precede, do before” plus irrealis *m*, with devoicing of *g* due to the preceding *s* – although even that leaves the vowel unexplained. However, the incorporation of “any more” and “yet” into the pre-verbal MAN complex is reminiscent of Moroccan Berber; compare Tashelhiyt preverbal *ur sul* “no longer” and *ur ta* “not yet”.

Focal or copular negation is accomplished with *səndza* / *həndza*, preceding the predicate (the difference appears idiolectal):

7.184 *lala səndza zadyu, binu*
 no NEG.FOC today yesterday
 No, **not** today, yesterday. (2008-02-05/17)

7.185 *tsank^{wəy}? - həndza ayəy*
 who? - NEG.COP I
 Who? - **Not** me. (2008-01-01/05)

I take *həndza* to reflect an irregular lenition from *səndza*, and *səndza* to derive from the negative element *s* plus *ndza* “with/and/if”. This is inexplicable in terms of comparative Songhay, but exactly parallels Tashelhiyt Berber *ur d* “ce n'est pas” (Galand 1981:217), due to the homophony of *d* “with” and *d* the copular particle (the two are syntactically distinct – “with” puts the NP following it into the “state of annexion”, the copular particle does not.)

Negation of sentences within the scope of an oath (usually “by God”, occasionally “by Saint X” etc.) is optionally accomplished using a unique construction: *ndza* “with/and/if” is placed after the oath and before the assertion proper, and the verb word itself is left without any negation. Thus:

7.186 *wəllah ndza ʕa-b-bəy haya, ʕa-dyan*
 by God **if** 1S-IMPF-know anything 1S-forget
 By God I **don't** know a thing, I've forgotten. (2008-02-05/17)

7.187 *wəllah ndza ʕa-kkum-bbəy*
 by God **if** 1S-yet-know
 By God I **don't** know yet. (N6p132)

This is a clear calque on the widespread northern Berber form *wəllah ma...* “by God not...” (Chaker 1996), where *ma* is homophonous with *ma* “if”, although the Berber construction is itself presumably at least partly derived from Arabic *wəllah ma*, where *ma* is the normal negator.

7.7 Order of verb arguments

Arabic and Berber are both strongly VO with flexible subject positioning (Dahlgren 1998); Classical Arabic and some Berber varieties are primarily VSO, while most modern Arabic varieties and some Berber ones tend to prefer SVO, especially for the minority of clauses where S and O are both expressed as full NPs. This makes it difficult to pinpoint Arabic influence in Berber word order for full NPs; however, as described below, the position of pronominal clitics is quite different in the two languages. Mainstream Songhay has SAOV as its predominant order (A=MAN particle), though some verbs take SAVO. Northern and Western Songhay are strictly SAVO, while TSK is strictly SAOV. The primary arena where Arabic/Berber influence can be displayed in Kwarandzyey is thus the positioning of subjects.

7.7.1 In Siwi

In every documented Berber language west of Tripoli except Sened – Kabyle, Tashelhiyt, Tuareg, Zenaga, Tumzabt, Nafusi, to name just a few – pronominal and directional clitics are “mobile”: they precede the verb if a negator or preverbal particle is present, or in relative constructions, and follow it otherwise. Siwi, Awjila, El-Fogaha, and Sened in Tunisia all lack this; instead, pronominal clitics and such relics of directional ones as remain are consistently postverbal, eg:

Siwi: *gá-skən-γ-áwən-t*

7.188 IRR-show-1S-2PDat-3MObj

I will show him to you. (2008-08-03/247)

7.189 *əllawwəl sə-mnet ga-n-uy-ek*

at first with-how much IRR-1P-take-2SObj

At first, how much I would have bought you for!

El-Fogaha: *nk-a-y-úġ-ît* *d* *nk-ā-ī-wát-ček*
 NEG-IRR-3M-take-3MObj and NEG-IRR-3M-hit-2MObj
 “non la prenderà e non ti bastonerà”
 He will not take it and will not hit you. (Paradisi 1963:95)

Awjila: *a-uġ-áh-tenet-ká*
 IRR-take-1S-3FPl-Neg
 “non le prenderò”
 I will not take them (Paradisi 1961:81)

Sened: *<adar'er'it>*
**ad-aγ-əγ-it*
 IRR-take-1S-3FObj
 “je la prendrai”
 I will take her. (Provotelle 1911:93)

The distribution indicates that this is a comparatively late calque on Arabic, rather than an archaism – Nafusi appears more closely related to Siwi than Awjila or Sened, yet it, along with Ghadames, has retained clitic mobility:

ġéss-aġ *ad-ak-éml-aġ*
 want-1S IRR-2SDat-talk-1S
 “voglio dirti”
 I want to say to you. (Beguinet 1942:149)

In other respects, Siwi hews closer to the Berber norm. The fixed order of pronominal clitics in Siwi is the same as across Berber: indirect, then direct:

7.190 *lá* *š-γ-as-t* *i* *ħadd*
 NEG give-1S-3SDat-3S to anyone
 I didn't give it to anyone. (2008-08-03/256)

Like all Berber and Arabic varieties alike, Siwi is VO. In agreement with other Berber languages, such as Ait Seghrouchen Tamazight (Bentolila 1981:264), the direct object usually precedes other non-pronominal non-subject arguments:

- 7.191 *akúbb^{wi} la y-uš-as naččú i támza*
 boy NEG 3M-give-3SDat food to ogress
 The boy didn't give food to the ogress. (2002-03-18/Tamza)

SV order strongly predominates in Siwi, to a degree surprising for a Berber language; however, as elsewhere in Berber and as in Arabic, postverbal subjects also occur.

Contrast the previous example with:

- 7.192 *y-úzd-as agg^{wid}*
 3M-come-3SDat man
 A man came to him. (2009-06-21/b)

7.7.2 In Kwarandzyey

VP order in Kwarandzyey shows remarkably few clear signs of external influence. While Tadaksahak, under Berber influence, obligatorily places indirect object pronouns before direct ones, with the exception of the archaic 2S dative *ana* (Christiansen-Bolli 2010:130), and Tasawaq does so optionally (Kossmann 2003), Kwarandzyey consistently requires the opposite pronominal order direct – indirect, eg:

- 7.193 *nə-m-həw-(a)=a.si*
 2S-IRR-tie-3S=3S.Dat
 You tie it to it. (2007-12-30/17)

This coincides with Arabic, but also with Koyra Chiini, and hence is best taken as a retention. Kwarandzyey shows consistent VO basic order, in contrast to the OV-dominant order of Eastern Songhay and Dendi, but in this it coincides not just with Arabic and Berber but with all other Northern and Western Songhay languages; if

influence is relevant, it would have applied at a far earlier stage than that under discussion here.

Pronominal arguments almost invariably precede other arguments. The order of non-pronominal arguments is pragmatically flexible; direct objects may follow other arguments, eg:

7.194 *aṛ=fu* *a-nn(a)* *ižwəy=fũ=si* *zga=fu*
 man=one 3S-give girl=one=DATcloth=one
 A man gave a girl a piece of cloth. (2007-12-16/02)

7.195 *a-ddza* *zzlayəf=dz=i=tsa* - *tsu=dz=i=tsa* *tsiṛəwən*
 3S-put plate.PL=ANA=PL=LOC - plate=ANA=PL=LOC spoon.PL
 She put spoons on the plates. (2007-12-16/02, with self-correction of the Arabic loanword *zzlayəf*)

But they may equally precede:

7.196 *ʕa-m-dz(a)=a.s* *tsəwka* *ləqšəyba=tsa*
 1S-IRR-put=3S.Dat worm trap=LOC
 I would put a worm for it in the trap. (2008-01-01/05)

The same holds in Koyra Chiini (Heath 1999a:247), so contact need not be invoked.

In Maghrebi Arabic and Berber, the position of the subject is rather flexible, preceding or following the verb depending on a variety of factors. Songhay, by contrast, is rather rigidly SV, and Kwarandzyey far more rarely permits postverbal subjects than Arabic or Berber do. There is, however, one context in Kwarandzyey where VS order is strongly preferred: existential predicates with long, conjoined, or listed subjects, eg:

7.197 *a-ba* *tsazəmmants...* *lahuwwa a-ba=ya.s* *zəd* *tsəksi*
 3S-EXIST ewe... but 3S-EXIST=1P.Dat also she-goat

There's the ewe... But we have also the goat. (2007-12-21/013)

7.198 *a-b(a)* *uy=m-kar-a* *ndza taqda* *a-m-wiyy-a*
 3S-EXIST REL=IRR-hit-3S with palm front 3S-IRR-kill-3S

There are those who hit it with a palm frond to kill it. (2007-12-22/11)

Arabic/Berber influence is a plausible factor in the development of this order, but ease of processing may also play a role.

Several authors have claimed that, all other things being equal, languages permitting null subjects allow optional VS order (Kenstowicz 1989; Rizzi 1982; Kayne 1980), yielding a “macro-parametric” account under which the latter property falls out from the setting of the Null Subject Parameter. On this account, the Kwarandzyey situation would be surprising: the one verb-like predicator that has come to allow VS order is one for which (unlike for verbs with the simplex MAN markers) 3rd person singular marking is in complementary distribution with in situ lexical subjects.

7.7 Conclusions

Calquing appears pervasive in the verb phrase and in non-verbal predication. Borrowing is much rarer, but is clearly attested, notably in the domains of diathesis morphology, negation, and nominal predication. Its occurrence with system morphemes is limited; within the verb phrase, where system morphemes have been borrowed and are productive with inherited lexemes, they appear to have double etymologies.

8 Information structure and conjunctions

The following chapter covers some issues of interest that do not fit neatly within the topics already covered. Cross-linguistic variation in strategies for topicalisation, focus, and question formation is rather less extensive than would be expected on the assumption of arbitrariness, but enough language-specific peculiarities are found for contact effects to be visible in some circumstances. Focus particles in particular provide another opportunity to test the hypothesis that borrowed function words appear in the same position relative to what they govern as in the source language, although complementisers are placed identically in the three languages. Coordination is syntactically similar across the three languages, but shows some noteworthy cases of borrowing.

8.1 Interrogation

8.1.1 Interrogation in Siwi

Yes/no questions are distinguished from statements by prosody – the last vowel is lengthened (turning *ə* into *i:/e:*) and the pitch rises at the end. Clause-final vowel lengthening is attested in a number of Arabic dialects, including Damascus (Kulk, Odé, & Woidich 2003) and, significantly, the Egyptian oasis of Dakhla (Woidich 1998); however, it primarily occurs pre-pausally rather than as a question marker. Vowel lengthening as a question-marking prosody is fairly common in Africa (Rialland 2007), and is attested in Zuara (Mitchell 2009:177), so there is no reason to postulate a connection with Arabic. Alternatively, *na ula* ‘or no?’ may be placed finally as a question tag; this is also common in regional Arabic (*walla lā’?*)

The basic interrogative words in Siwi are:

Table 89.

	Siwi	Etymology:
what? (after preposition)	<i>bətta</i>	Berber: Beni Snous/Ait Seghrouchen/El-Fogaha <i>matta</i>
what? (subject/object)	<i>tanta / ta</i>	* <i>matta</i> reduplicated, abbreviated
who?	<i>bəttin</i>	<i>bətta</i> + some suffix?
where?	<i>mani / man / ma</i>	Berber: Beni Snous/Figuig/Ait Seghrouchen <i>mani</i> , El-Fogaha <i>mān</i>
when?	<i>məlmi</i>	Berber: Beni Snous <i>məlmil</i> , Figuig <i>milmi</i> , Kabyle/Ait Seghrouchen <i>məlmi</i> , El-Fogaha <i>mémmi</i>
how?	<i>mamək</i>	Berber: Kabyle <i>amək</i> , Figuig <i>manəš</i>
why?	<i>itta</i> <i>tadi</i> <i>wara</i>	<i>i</i> “to” + <i>ta</i> “what”; cp. El-Fogaha <i>i-mátta</i> <i>ta</i> “what” + <i>di</i> “EXIST” ?
how much/many?	<i>mnet</i>	Tam. <i>man-iket</i> “how many?”

For interrogatives with Arabic *kam-* plus an Arabic measure word, see Numerals. Otherwise, none of these are Arabic borrowings, although the etymologies of *wara* “why?” and *bəttin* “who?” are obscure. *i-tta*, lit. “to what?”, could be a calque on dialectal Arabic *l-ēš*, shared with El-Fogaha, but the development is paralleled further afield in Berber, eg Ait Seghrouchen *may-mi*, interpretable as “what-to?”.

Wən-mani “which?” (lit. REL-where?) follows the noun, like other relative clauses:

- 8.1 *attút* *wən* *máni xs-i-ʔ?*
 mulberry M.REL where want-PT-2S
 Which mulberry do you want? (2008-05-07/329)

The position of adpositions governing interrogated elements shows clear signs of Arabic influence, as discussed under Adpositions. Interrogated elements continue to be positioned clause-initially, in conformity with both other Berber languages and most Arabic varieties (although not mainstream Egyptian Arabic), as the previous example illustrates.

yama- “how much!” < Arabic *yā mā* “oh what!” is used to form exclamations, eg:

- 8.2 *yáma* *i-šár-i* *fəll-as*
 how much 3M-happen-1SDat on-3S
 How much has happened to me due to him/her (How much I've suffered)!

8.1.2 Interrogation in Kwarandzyey

Yes/no questions are normally marked by rising terminal intonation, as in regional Arabic and Koyra Chiini (Heath 1999a:174) alike, but all interrogative tags noted are Arabic borrowings. Sentence-final *wəlla walu* “or no?”, from regional Arabic, can be used as an interrogative marker; *wəlla* “or” alone is occasionally used as such, as in both Maghrebi Arabic and southern Songhay, but this seems to be commonest among younger speakers. Initial/final *yak* “right?”, from regional Arabic, is used to indicate that a positive answer is expected or just to establish rapport; more rarely, final *(m)uħu*, from Arabic *ma hu(wa)* “is it not”, is used.

The basic interrogative words in Kwarandzyey are:

Table 90.

	Kwarandzyey	Etymology
*which?	* <i>tsa</i>	Songhay: KS <i>čin</i> “what?”, Td <i>ci</i> “who/what?” (also prefixed, eg <i>c-agud</i> “when? = what-time?”) Berber: <i>matta</i> above, Zenaga <i>taʔK</i> “who/what?” (also prefixed, eg <i>taʔk-oʔgd</i> “when? = what-time?”)
who?	<i>tsa(n)kʷəy</i>	<i>tsa</i> + <i>kʷəy</i> “person (of)” < Songhay, eg KC/KS <i>koy</i> “person (of)”
what? whom? (with adposition)	<i>tsuyu</i>	<i>tsa</i> + dem./rel. <i>uyu</i>
how's that?	<i>tsamisi</i>	<i>tsa</i> + * <i>misi</i> < Songhay, eg KC <i>mise</i> / KS <i>misa</i> “way, manner”
how?	<i>tsaməsyu</i>	<i>tsamisi</i> + dem./rel. = <i>yu</i>
which place?	<i>tsaday</i>	<i>tsa</i> + <i>aḍa</i> “place” + dem./rel. = <i>yu</i>
where is?	<i>mən</i> (<i>man-</i> with pronominal subject)	Songhay: KC/KS <i>man</i> , Zarma <i>mán</i> Berber: <i>mani</i> above
where?	<i>məndzi</i> , <i>bəndzi</i>	<i>mən</i> + ana./rel. = <i>dzi</i>
what? (in rhetorical questions implying negative judgement)	<i>ma/mu</i>	Songhay: KC <i>maa</i> , KS <i>ma-čin</i> , TSK <i>mă:nè</i> Berber: <i>matta</i> above Arabic: Cl. <i>mā</i> , MAr. <i>ma-</i> in <i>ma-l-āk</i> “what's wrong with you?”
how many?	<i>mahəyni</i>	<i>ma</i> + <i>həyni</i> “quantity” < Songhay, eg KC <i>hinne</i> , KS <i>hinna</i>
when?	<i>managu</i>	Berber, eg Tashelhiyt <i>manakʷ</i>
why?	<i>maɣa</i> / <i>maʕa</i>	Berber, eg Taznatit <i>ma-ɣa</i> , Figuig <i>ma-ɣər</i> (< what-at)

tsa “which?” is not generally accepted without the elements above; I occasionally heard

it before nouns or proper names (eg *tsa lmadani* “which Madani?”), but my attempts to use it were generally rejected, and elicitation for “which?” yields forms with *tsuyu*. Interrogative words are usually followed by a focus particle (see below.)

Although only two interrogative words are clear-cut loans, both from Berber, much of the system consists of morphemes with plausible antecedents in both Songhay and Berber. Since most of the core grammar is Songhay, the conservative assumption is that all such morphemes derive from Songhay in the absence of other data. This may be questioned in the case of *tsa*: the Songhay comparanda have a very limited distribution, and their final *i* should not correspond to Kwarandzyey *a*, while the *k* of Zenaga *ta?k* is analysed by Taine-Cheikh as a suffix, raising the possibility of a direct borrowing from pre-Zenaga **ta?*. However, the *a* could also result from grammaticalisation of the focus marker *a*, discussed below.

ma is used only in rhetorical questions implying negative judgement, eg:

8.3 *mu* *künn-a?*
 what.RH find-3S
 What's wrong with him? (2008-05-03/17)

8.4 *ma* *hur-ni?*
 what.RH enter-2S
 What brought *you* in? (N6p53; note zero-derived causative, unusual for *huru*)

8.5 *ma* *zzu-n* *laxba=γ=si?*
 what.RH take-2S issue=DEM=DAT
 What took you to this issue? (ie, what business is it of yours?) (N5p217)

The interrogative element *ma/mu* may be a retention from proto-Songhay in this case (as suggested by the cognates listed), but the context to which it has been restricted is reminiscent of regional Arabic *ma* (itself a retention from proto-Semitic), which has been replaced in normal usage with *aš* “what?” but survives in the isolated expression

ma-lǎ-k (what.RH-to-2S) “what’s wrong with you?” (also with other pronominal affixes.) However, the parallelism is limited; regional Arabic does not allow **ma dǎxxl-ək* “what brought *you* in?” etc.

8.2 Focus and focus particles

Most languages have morphosyntactic means of marking contrastive/exhaustive *focus* on a phrase, asserting that the statement can be said of the phrase’s referent and opposing this to its inapplicability when alternatives to the referent are substituted¹⁶. Classical Arabic marks focus simply by fronting; most modern dialects consistently mark it using a cleft-like construction with the relative marker *illi*. Berber normally fronts the focused element and follows it with the invariant relative/focal marker *a/ay/i*. Across Songhay, focused elements are fronted; the commonest focus-marking morpheme in Songhay is a postposed reflex of **no* (Tadaksahak subject focus *nə-*, KC non-subject focus *na*, KS focus *no*, Zarma focus *nô*, Dendi *nɔ*), but others include a postposed strong 3rd person pronoun (KC subject focus *ŋga*), or what looks like a postposed relative marker (KS subject focus *ka*), while Tadaksahak non-subject focus uses fronting and intonation alone.

More complex relationships between the focused element and the set of alternatives are handled by *focus particles* (König 1991), such as *even*, *only*, *also*. Depending on language and circumstances, they may behave adverbially or be required to appear next to the specific phrase that they describe; our concern here will be primarily with the latter case. Focus particles may be divided into *additive*, particles that allow the statement to be true of other alternatives considered, vs. *restrictive*, ones that deny all alternatives under consideration; and into *scalar*, ones that select only alternatives ranked above/below the phrase in a certain scale, *non-scalar*, or ones that can be either. Matras (1998) proposed that restrictive particles are more easily borrowed than additive ones; the results here fit this claim, since Siwi has borrowed all focus particles and Kwarandzyey has borrowed all except an additive one.

16 New information focus is not well documented across any of the three families concerned; as such, it offers little scope for examining contact, and will not be investigated in detail here.

8.9 *lá if-əx-t həttú g əjján agbán*
 NEG find-1S-3MObj **even** in **one** house
 I didn't find him in **a single** house. (2009-06-22/a)

8.10 *lá z̄r-i-x hətta jjan n iri*
 NEG see-PT-1S **even one** GEN star
 I didn't see **a single** star. (N1p145)

The restrictive particle *yer* “just, only, except” (also “but”), placed before the constituent it governs, is a transparent borrowing from Arabic *γayr-*; its positioning is like both *γayr-* and the Tamashek equivalent *ar*:

8.11 *yáʕni múmkin wáya ge-y-xáddəm yer jjaṭ n tasəmmaʕá:t...*
 so perhaps this.M IRR-3M-work **just** one GEN speaker
 So perhaps this one turns on **only** one speaker... (2008-05-03/240)

8.12 *...la ga-ššy-ax gəd-wən yer wənn if-t-x-a ššwaṛ-ənnəw yúr-əs*
 NEG IRR-take-1S in-2P **except** M.REL find-PF-1S-PF cup-1SGen at-3S
 ...I won't take anyone among you **except** the one I found to have my cup. (2008-08-03/250)

The additive particle *bərdu* / *bidu* “also, too, indeed” is placed after the constituent it determines, as in regional Arabic:

8.13 *xəllš-əx ššyül-ənnəw yer ənni əngr-ax gd-ok bərdu*
 finish-1S work-1SGen but COMP stay-1S here-2:M **also**
 I finished my work, but I stayed here **too**. (2008-05-05/294)

8.14 *tikli-nnəs drus-a. y-uṭin-a ačču-ənnəs bīdu drús-a*
 walk.VN-3SGen few-PF. 3M-ill-PF eat.VN-3SGen **also** few-PF
 His walking is inadequate. He is ill, his eating is **also** inadequate. (2009-06-27/a)

- 8.15 *y-umṃʷá-n-as* *ams-ók* ***bidu***
 3-say-P-3SDat thus-2:M **also**

They told him: Thus, **indeed**. (ie Yes indeed) (2008-08-03/250)

bərdu is a transparent borrowing from Egyptian Arabic, and ultimately from Turkish *bir-de/dir* (Prokosch 1983). *bidu* is the older and still commoner Siwi form, attested in the 1827 vocabulary of Pacho (1979:358): <*Asfa bidous* **اصفا بيدو**> = **asfa bidu* (today also) “aujourd’hui”. This has no obvious Berber source, and probably also derives from Turkish *bir-de* via an unattested Arabic form (the final vowel change is best explained as a result of the Arabic sociolinguistic variable *-ah* [ɛh] / *-u* “his”), but the loss of *r* would be irregular.

The restrictive scalar particle *bass* “only (no more than)”, from Egyptian Arabic *bass* and ultimately Ottoman Turkish/Persian *bäs* (Prokosch 1983), follows its constituent, as in Arabic:

- 8.16 *lhádd wən g-úsəd* *X i isiwan* ***báss***, *áṣruš ʕlaṭúl*
 until REL.M IRR.3M-come X to Siwa **exactly** wedding immediately
Right as soon as X comes to Siwa – wedding straightaway. (2009-06-17/a)

- 8.17 *hḥ-i-x* *i* *lgára marṛt-én* ***bass*** *g* *əlṣmər-ənnəw*
 go.PT-1S to Gara time-DUAL **only** in life-1SGen
 I’ve **only** been to Gara twice in my life. (2009-06-19/a)

8.2.2 In Kwarandzyey

Focus can be overtly marked in Kwarandzyey using =*á*, usually stressed, placed after the fronted focalized NP (negated with *səndza/həndza* – see Negation), eg:

- 8.18 *ndz uyudz=á* *y-ab-sku-ndza* *ya*
 with DEM.ANA=**FOC** 1P-PROG-be caught-CAUS indeed

That (worms) is what we would catch them with. (2007-12-22/11)

If the focalised element is the subject, then the verb takes no subject marking; instead, the NP+focus marker cliticise directly to the verb:

- 8.19 *k^wəllha* *a-m-ts* *aγ=á* *mməy lkas=γú,*
 each one 3S-IRR-say 1S=FOC own cup=DEM,
gál *g^wá-ndza,* *həndzá* *n=á* *mmáy-a,*
 QUOT stay-CAUS NEG.FOC 2S=FOC own-3S

Each one will say “It’s *me* that owns this cup.” They’ll be like, “Put it down, it’s not *you* that owns it.” (2007-12-22/12)

- 8.20 *uyuna=y=a* *yərbəħ*
 DEM.DIST=PL=FOC win
 “It’s *those guys* that won.” (N2p27-29)

and the *b* of certain TAM markers (see Verbs) is not deleted despite the non-adjacency of the subject:

- 8.21 *əlhaj tuhami* *yaħyawī* *an=á* *ba-tts-aná*
 Hadj Touhami Yahiaoui 3S=FOC PF-say-3SEmph
 It’s Hadj Touhami Yahiaoui that said it. (2007-12-22/12)

The obvious etymology for this element is Berber – specifically, compare Tashelhiyt *a*, Tamasheq *a*, themselves linked to eg Figuig *ay* (Kossmann 1997:320), Kabyle *i*. Like their Kwarandzyey counterpart, these focus markers all follow the fronted NP; they are followed by the subject participle, a verb form similarly lacking person agreement. (“Special” focus marking strategies for subjects as opposed to non-subjects appear to be widespread in West Africa (Fieldman et al. 2010), but the parallelism to Berber is rather more specific.) TSK has a rather similar focus marker, *á*; however, this precedes rather than follows the fronted element, and appears isolated within Songhay (compare the cases cited above.) Kwarandzyey *a* is thus best regarded as a Berber loan. Its position

is the same as that of focus markers in most other Songhay languages.

Additive (not necessarily scalar) *wara* “even, also, too” has cognates in a few southern Songhay languages – cp. KC/KS *wala* “even”, TSK *wàlà* “nothing!”; however, this cannot confidently be reconstructed for proto-Songhay (unrecorded in Zarma, HS, and Dendi, for example), and is probably a relatively early borrowing from Tuareg, cp. Tamasheq *wāla* (see Negation for other Berber cognates). It precedes the constituent it determines, as in Songhay and Berber alike. However, “also” in southern Songhay is handled by a postposed particle – KC/KS *moo*, Zarma *mò*, TSK *mò*; in this respect Kwarandzyey matches Berber/Arabic as against southern Songhay.

8.22 *a-bə-nyɑ* **wara** *tsəndzu*

3S-IMPF-eat **even** stone

It [the locust] eats **even** stone. (2007-12-22/11)

8.23 *a-s-sab-sku* **wara** *ndza ləqşəyba*

3S-NEG-PROG **even** with trap

It is not caught **even** with traps. (2008-01-01/05)

8.24 *amrər ʕa-s-kkəs* **wara** *adə=fu*

erg 1S-NEG-leave**even** place=one

As for the erg, I didn't leave out a **single** place. (2007-12-06/AM)

8.25 *uyu, war uyu i-b-ts=a.s* *ʕayša-səlləfts*

DEM, **even** DEM 3P-IMPF-say=3SDat bird sp.

This one, this one **too** is called “Aisha-selleft” (bird sp. - identifying pictures in a book) (2008-01-01/05)

8.26 **wara** *tsin qqux.u* *a-hhur-nn(a)=a.ka?*

even date dry.ADJ 3S-go in-away=3S.Loc

Dried dates **too** go into it? (2007-12-06/AM)

Restrictive *ɣar* / *ʕar* “just, only, except” is borrowed from Arabic *ɣayr*- “other than”, perhaps via Berber (eg Tashelhiyt *ɣar*). The irregular vowel (for expected *ɣir/ɣayr*) and the lenition of *ɣ* to *ʕ* are both shared with regional Arabic, but may reflect the influence of a Berber form, cp. Tamashek *ar* “except”. Mainstream Songhay has *kala* (KC/KS), *kàlá* (Zarma) “only, except”. Like its Arabic, Berber, and Songhay equivalents alike, it is preposed:

8.27 *i-m-dzum=a.ka* **ɣar** *həyni*
 3P-IRR-sow=3S.Loc **just** grain
 They grow only grain in it. (2007-12-30/17)

8.28 *bəʃʃəh əgga zman* **ʕar** *af=yu*
 but PAST old days **just** one=PL
 But in the old days there were **just** a few. (2007-12-30/17)

8.29 *adayu a-s-sab-gʷa-ndza* **ʕar** *bubšir*
 here 3S-NEG-PROG-stay-CAUS **just** wheatear
 Nothing lays here except the wheatear (bird). (2008-01-01/05)

Restrictive *halli* “only”, of obscure origin, is used phrase- or clause-finally, or even both, as in:

8.30 *kung=fʷ* **hall**=á *bɑ=ɣəy.si* **halli**
 palm=one only=FOC EXIST=1S.Dat only
 I only have only one palm tree (لدي نخلة واحدة فقط). (N5p214)

8.31 *tsəksi* **hall**=á *a-b-ʃəwwəʔ*
 now only=FOC 3S-IMPF-photograph
 Only now is it taking pictures. (lastvid4)

Other clause-final focal particles are Arabic loans. Additive *zəd* “furthermore” derives via Maghrebi Arabic from Classical *zid* “add!”, and is also used in regional Arabic.

While it is clause-final in general; postposed existential subjects may follow it.

8.32 *tsuɣ a-bɑ zəd?*
 what 3S-EXIST **furthermore**
 What **else** is there? (2007-12-22/13)

8.33 *bibəy=f^w=kədda=i=bɑ=(a).s an gung=tsa zəd*
 black=one=small=PL=EXIST=3SDat 3SGen belly=LOC **furthermore**
 It **also** has some blackness on its belly. (2008-01-01/05)

8.34 *a-bɑ ya.s zəd tsəksi*
 3S-EXIST 1P.DAT furthermore goat
 We have goats **too**. (2007-12-21/31)

Another clause-final particle is restrictive *uxlaʃ* “alone, and that's all”, from Maghrebi Arabic *u xlaʃ* “and that's all”:

8.35 *a: gga-ɣəy kədda-bbunu uxlaʃ*
 oh PAST-1S small-tiny **that's all**
 Oh, I was **just** very little. (2007-12-06/AM)

8.3 Topic markers

In Arabic and Berber (André Basset 1959) – as in many other languages – topics are typically marked by fronting, with in situ resumptive pronouns in the comment (obligatory if affixal, otherwise optional) when a referential noun phrase is fronted; the fact that Siwi does the same therefore conveys no information about the effects of contact. In Songhay too, topics are typically fronted; however, they are also commonly followed by a special particle – KC *bine / ta*, KS *bin(d)e / key / ta*, TSK *kăy*, Zarma *wô / yàa*. Tadaksahak uses *sa* with copular clauses, but otherwise simply fronts the topic (again with in situ resumptive pronouns.) While some of these topic particles are shared by more than one language, no form has yet been recorded with reflexes in both

Northern and Southern Songhay, making it impossible to reconstruct one for the proto-language. The fact that Kwarandzyey too uses fronting alone (with no effect on subject marking) may thus as easily be a retention as a contact-influenced change.

Siwi:

- 8.36 *əjjən gád-sən* *yə-nɣ-ən-t...* *əjjən gád-sən* *yə-ffá:ɣ-a*
one in-3P 3-kill-P-3MObj **one in-3P** 3M-go out-PF
One of them they killed... **One of them** got out. (2008-08-03/247)

Kwarandzyey:

- 8.37 *iwa lmahdi* *n-bəɣ* *a-m-hnu-tsi?*
 well **Mahdi** 2S-want 3S-IRR-go out-hither?
 So, **the Mahdi**, you want him to come forth? (2007-12-11/24)

Both languages have borrowed topic-shifting markers, used to announce new topics not established by the previous discourse but to be discussed in the following discourse. In Siwi, *bənnisba i* < Modern Standard Arabic *bi-n-nisbat-i 'ilā* (with-the-relation-GEN to) “with regard to, as for” combines an Arabic prepositional phrase borrowed as an unanalysed discourse-functional particle with a Siwi preposition calquing an Arabic one:

- 8.38 *bənnisba* *i* *wənn* *i-ɾəššĥ-in-a*
 with regard to REL.M/P 3-put forward-3P-PF
 As for the one they've put forward... (N2p250)

However, though attested more than once, this item has so far been recorded only in the context of discussing elections, a topic for which Arabic vocabulary is highly favoured. It is thus not clear to what extent it has been accepted into Siwi.

Kwarandzyey *aha* “what about, as for” is placed before the new topic:

- 8.39 *ənnəqqaš a-ttsani. aha lxəyyaɣ a-tnu*
 sculptor 3S-sleep **as for** tailor 3S-get up
 The sculptor went to sleep. **As for** the tailor, he got up. (2008-01-30/10)

- 8.40 *aha ni, n-bbəy haya?*
as for 2S 2S-know any(thing)
What about you, do you know any? (2007-12-11/24)

This is a Berber loan, to be compared to Ait Seghrouchen *aha* “et, alors”, Ntifa *aha* “voilà”, and Tumzabt *ha / a* “et, et donc, alors”, eg *ha nəšš, w-a yi tərgibəm na?* “**et moi donc**, vous ne m'avez pas vu, n'est-ce pas?” (“**And me**, you haven't seen me have you?”) (Delheure 1984). However, its usage is considerably narrowed: the Berber cases seem to be quite general clause connectors, with topic shift no more than a possible usage among many.

8.4 Subordinators

As discussed under Adpositions, it is useful to divide the traditional category of complementisers into two. Those that take clausal objects and form adverbials are treated as adpositions; those, such as “that” or “whether”, that simply introduce and indicate the mood of a subordinate clause are treated here.

8.4.1 Siwi

No overt main clause complementisers have been noted. The very general clausal subordinator *anni/ənni/inni* is of unclear origin; it is reminiscent of Classical Arabic *'inna*, but the final vowel is problematic. A Berber etymology is possible; recall that the infinitive “to say”, *aṃṃ^wi*, derives from **anwi*, and with an irregular shift of **nw* to *nn* (as elsewhere in Berber) this could be an example of the common grammaticalisation path “say” > subordinator (Heine & Kuteva 2002:269). This is used alike for indicative declaratives:

- 8.41 *lé y-ssn-ən anni ntta*
 NEG 3-know-P **COMP** he
 They didn't know **that** it was him. (2008-08-03/250)

and purposives:

- 8.42 *yə-dwál anni xáləd la ge-y-γdáb af aḥḥ^{wá}-s*
 3M-return **COMP** KhaledNEG IRR-3M-anger on brother-3S
 He returned **so that** Khaled would not get angry at his brother. (2008-05-05/294)

Its usage is thus wider than colloquial Arabic *'inn-*, restricted to indicative declaratives. Its clause-initial position is as in Arabic and Berber (eg Ghadames *dīd*) alike.

8.4.2 Kwarandzyey

The only overt main clause complementiser noted, optative *nḍər*, is discussed under Verbs and predication. As in Arabic, Berber, and Songhay (eg KC *kaa/kala* “that”), subordinate complementisers are placed clause-initially. The subordinate complementisers are both Arabic borrowings, and remain optional: declarative *bəlli* (< MAr., ultimately < “with-REL”):

- 8.43 *nə-bbəy bəlli a-sku*
 2S-know **COMP** 3S-be caught
 You know **that** it's gotten caught. (2008-01-01/05)

and *was* for yes-no questions (< MAr., ultimately < “what”):

- 8.44 *ʕa-hh-ana was a-kka wəlla walu*
 1S-ask-3S **whether** 3S-come or no
 I asked him **whether** he came or not (N8p169)

Subjunctive clausal arguments do not take complementisers; adverbials of purpose can be formed with *ndzũγ* (see Adpositions.) Non-yes/no questions do not take complementisers; as elsewhere in Songhay, some question words are replaced by non-interrogative counterparts in subordinated questions (eg *mahəyni* “how many?” with *həyn-dzi* “quantity=ANA”.)

8.5 Coordination

Conjunctions will not be covered in detail; their grammar, insofar as it has been documented well enough for comparison, is too similar in the three languages for many syntactic contact effects to be displayed. However, a few borrowings are found, beside some possible calques. The clause-linkers borrowed conform to Matras's (1998) hierarchy of borrowability: “and” (not borrowed here) < “or” (borrowed in Kwarandzyey) < “but” (borrowed in both).

8.5.1 Siwi conjunctions

“and”, linking NPs, is inherited *d*, also meaning “with (comitative)” (see Adpositions.)

- 8.45 *ʕárbi d ənglizi d fɾənsáwi*
 Arabic **and** English **and** French
 Arabic **and** English **and** French (2009-06-23/a)

Unlike more westerly Berber languages, Siwi can use *d* to link clauses as well as nominals. This is a marked option, and often implies strong contrast:

- 8.46 *y-uʔn-ín-a d i-táčč-ən*
 3-ill-P-PF **and** 3-eat.INT-P
 They are ill, **yet** they are eating. (2008-04-27/224)

However, it is attested in more general contexts:

- 8.47 *ruħ áyd-i... də áyd-i ħəbba n tigúrgaʕ [sic] n*
azəmmur
 go bring-1SDat... **and** bring-1SgDat bit GEN sticks GEN
 olive

Bring me [charcoal-making tools] and bring me some olive sticks. (2002-03-18/Ogress)

- 8.48 *i-bənnu-n səgd-əs, d i-liyyas-ən səgd-əs jadir*
 3-build.INT-P with-3S, **and** 3-plaster.INT-P with-3S wall
 They build with it, **and** plaster the wall with it. (2008-05-07/322)

This is presumably a calque off Arabic, where *wa-* links nominals and clauses alike. It may be an early one, however; similar constructions are found in Zuwara (Oomen, p.c.), and in El-Fogaha the use of *d* has been generalised just as far, eg:

- 8.49 *wān elǧarb ye-skā arən d ye-skā ssaddāy-énas tniǧést*
 M.REL west 3M-put flour **and** 3M-put below-3S ashes
 “Quello dell'occidente mise la farina e sotto di essa mise della cenere.”

The Western one put some flour **and** below it put some ashes. (Paradisi 1963:st.

II)

“or” is inherited *na / namma*, cp. Kabyle *nəγ*.

- 8.50 *təltiyam na árbaʕ*
 three days **or** four
 Three **or** four days. (2008-05-07/322)

“neither... nor...” constructions use *la... wala...*, exactly as in Arabic (where *wa-* is Arabic “and”):

- 8.51 *lá 'a-čč-ax la tyátt wála irəbɣiyən*
 NEG IRR-eat-1S **NEG** goat **nor** kid.PL

I will eat **neither** the goat **nor** the kids. (2002-03-18/Tamza)

The contrastive clause linker “but”, *yer*, is the same word as the restrictive focus particle “only” from Arabic, a cross-linguistically common polysemy (König 1991:110) also reported (“aber”) for the oasis of Farafra (Behnstedt & Woidich 1985):

8.52 *yə-sl-ən* *fəll-as itádəm-ənnəs*, *yer* *lé* *y-ssn-ən* *anni nttá*
 3-hear-P on-3S people-3SGen **but** NEG 3-know-P COMP he

His people heard about him, **but** they didn't know it was him. (2008-08-03/250)

8.5.2 Kwarandzyey conjunctions

“And”, linking NPs only, is inherited *ndza*, homophonous with and historically identical to the instrumental and conditional markers (but no longer homophonous with the comitative, AGR+*indza*, except when the first conjunct is pronominal.)

8.53 *ann-əbba* *ndza* *a-yəmma*
 3SGen-father **and** 3S-mother
 his father **and** mother (2007-12-22/12)

“Or”, linking NPs or clauses, is *wəlla*, from Maghrebi Arabic; cognates are found throughout Songhay (eg KC/KS *wala*, Zarma *wàlá*) but the expected reflex of a proto-Songhay form that could yield these would be **wara*, as for “even” above, so this is best explained as a later replacement of an old Arabic loan by a newer one. Its placement between the conjuncts is as in both Songhay and Arabic.

8.54 *agəržəm* *wəlla* *asənkri*
 dab-lizard **or** skink
 a dab-lizard **or** a skink (2007-12-22/13)

“neither... nor” is Arabic *la...la / wala / wara...* (with the common shift of medial *l > r* in the latter):

- 8.55 *nə-s-b-xəlləṣ* *la* *lkura* *wara* *ɣuna*
 2S-NEG-IMPF-pay **neither** electricity **nor** whatsit
 You pay neither electricity nor whatsit. (2008-01-01/08)

For the contrastive clause linker “but”, the commonest equivalent is *bəṣṣəḥ* < MAr. (ultimately < “with truth”); the semantically similar *lahuwwa*, also < MAr. (ultimately “not it”) usually introduces new sentences, like English “however”. As in Arabic, they appear clause-initially.

- 8.56 *iytsa* *ʕa-s-sa-kümm-iffəḥm* *nn* *dzyəy=yu*
 lo 1S-NEG-PF-yet-understand 2SGen speak=PL/VN
bəṣṣəḥḥ *ks* *ʕa-mm-iffəḥm-a*
but shortly 1S-IRR-understand-3S

Now I haven't understood your words yet, **but** I'll understand them shortly.
 (2008-01-st)

8.6 Conclusion

The particles examined here are compatible with the generalisation that borrowed functional items retain the syntax of their source language, although in many cases the item replaced would have had the same syntax already. The form of complementisers (\emptyset vs. *bəlli/waš*) is determined by whether or not they are governed by a higher clause; as such, they fit Myers-Scotton's (2002) definition of outsider late system morphemes, which the ML Hypothesis (see 6.1) predicts should not be switched without yielding EL Islands. Their borrowing thus appears surprising in her model.

9 Overview

The contact effects established for Kwarandzyey and Siwi yield a picture of their history and give a fair idea of what to expect in sociolinguistically similar situations; but they also provide an opportunity to test theories about language. The primary objects of historical linguistic study are non-universals, or conventions (Croft 2003): any aspect of language characterised by Saussurean arbitrariness (Saussure 1959), from instantiations of statistical “universals” down to idiosyncratic properties of single languages.

Conventions within a single language can be difficult to isolate from one another; the observer risks making psychologically unjustified generalisations in order to capture coincidental, or at least conventional, similarities in the distribution of different items. Language contact, however, where specific conventions enter an ecology of different conventions, provides a test of which statements of conventions are psychologically valid. The question of how language contact works amounts to the question of how conventions are stored – a question that every theory of language has to face at some stage. The historical account developed in the preceding chapters offers opportunities to test several ideas about that.

9.1 Matter borrowing

9.1.1 Morphophonological effects

Productive morphology borrowed from Arabic into Siwi includes both suffixes (superlative *-hūm*, arguably plural *-at*) and templates (comparative *CCəC*, deadjectival noun *l-CCaC-ət*, adjectival *a-...eCi*, plural patterns including *l-CCaCəC*). Every borrowed bound morpheme that can be combined with Berber stems is used with at least some borrowed stems, but the converse is not true; a number of borrowed bound morphemes (dual *-en*, the person affix series used with *msabb-* “because”, most Arabic plural patterns) are attested only on borrowed stems. Kwarandzyey has borrowed not only productive Berber affixes (male/female nominal formative *a-/tsa-*, the double-etymology centrifugal suffix *-nna*), but also a productive Berber ablaut plural pattern *i-...aC-ən* and an Arabic causative by gemination of the middle consonant which, while

not demonstrably productive, is applicable to most unaccusative verbs of the form $y\partial CC\partial C$. Again, every borrowed bound morpheme that can be combined with Songhay stems is used with at least some stems borrowed from the same language, but the converse is not true: most borrowed bound morphemes (dual $-\partial yn$, most Berber and Arabic plural patterns, Arabic gender markers $-a / \partial ts$) are found only on borrowed stems. The results throughout thus conform to Moravcsik's (1978) claim that “No bound morphemes can be borrowed unless free morphemes which properly include them are borrowed”; the obvious conclusion is that in contact situations like this, and perhaps universally, bound morphology is borrowed only through the borrowing and subsequent analysis of morphologically complex words.

The typological effect of borrowing on Siwi has been minimal: Berber and Arabic had rather similar inventories of morphophonological processes to begin with. But, apart from tone, southern Songhay morphology is exclusively affixing (including reduplication); Kwarandzyey presents a startling contrast with its productive ablaut/gemination processes and numerous loanwords exemplifying root/template morphology. This is not restricted to borrowed morphology: as a result of the historical laxing of vowels in final closed syllables, even inherited verbs now undergo ablaut when 3rd person object pronouns or adjectiviser $-\partial w$ are suffixed. Nonetheless, it shows considerably less borrowed productive template morphology than Siwi. This might reflect a difference in contact time, but might also reflect the difficulty of fitting short roots whose meaning is commonly strongly dependent on vowel quality (and even tone) into a system of templatic morphology that obliterates those distinctions and often requires at least 3 consonants (or the equivalent) in its input.

9.1.2 Units borrowed as wholes

The attestation of several larger combinations in this data offer a useful opportunity to examine the question of what restrictions there are on borrowing larger units as such. There is probably no limit, apart from whatever may be imposed by memory constraints, on the syntactic size of borrowed phrases in the source language: thus the Arabic clause *'in šā'a llaḥu* “if God wills”, for example, has been borrowed as an

unanalysable adverb *ənšallāh* into both languages under discussion. The very phrasing of the previous sentence, however, presupposes that the units borrowed are syntactic phrases (or words); Marantz (1997) claims that listemes in general (form-meaning pairs that must be stored rather than derived, including idioms or proverbs as well as most words), must be syntactic domains (ie complete subtrees) and there seems to be no evidence against this at the source end – no borrowed phrases consisting only of subject+unergative verb, or quantifier+inalienable noun, say. We might expect a similar limitation to apply in the recipient language, so that units whose elements could not form a domain under the language's existing rules are not analysed; but in a movement-based framework it is not clear that there can be any domains in one language which could not also form domains in the other, and if movement is rejected then Marantz's original claim is clearly false. (It could be questioned in any case – forms like “God save...” on the face of it look like idioms with gaps for the object.) In any case, the domain restriction, while plausible, appears likely to be too permissive: the borrowing of verb+object as a unit has not been observed in this data, for example.

Above the level of the syntactic word, analysable borrowed units in this data appear to be limited to:

- preposition+pronoun (Siwi “because”);
- numeral/quantifier+measure noun (Siwi, Kwarandzyey);

The existence of analysable loans consisting of more than one syntactic word rules out one conceivable restriction: that borrowings would need to enter the language as single words. But these are set apart from non-analysable borrowings, such as many instances of preposition+def. noun > adverb (in both languages), or regens+rectum (eg Kwarandzyey *mm^w-əlbəyna* “Euphorbia sp.” < “mother of milk.diminutive”), by one simple fact: paradigmaticity. They are analysable because at least one of their parts is attested independently in the language or in other borrowings.

Several clearly analysable borrowed units consist of roots plus elements changing the syntactic properties associated with the root:

- adjective:comparative/superlative (Siwi)

- verb:causative (Kwarandzyey, Siwi)
- verb:passive (Siwi)
- agent:verb (Siwi)
- action:verb (Kwarandzyey, Siwi)

At least one of these combinations (comparative/superlative) could not be expressed as a single word in the recipient language prior to borrowing, ruling out one obvious conceivable restriction on borrowing. On the other hand, one gap is noteworthy: whereas Arabic adjectives are borrowed into Siwi in a way that allows them to be analysed as root + adjectivising pattern, this is unattested in Kwarandzyey. This suggests the generalisation that category-changing morphology can be analysed in the recipient language only if the relevant categories (here, nominal adjectives) exist.

Other analysable borrowed units combine a root and a feature marker:

- noun:gender (Siwi; Kwarandzyey for animates)
- noun:number (Siwi, Kwarandzyey)
- adjective:number (Siwi, eg “rich”, “poor”, “Saidi”)
- adjective:gender (Siwi, if ordinals are considered adjectives)

The limitations are noteworthy. No conjugated verb forms are borrowed into either language (the 3rd person masculine singular verb forms borrowed in Kwarandzyey are left unanalysed), despite the very high frequency of such forms in speech in the source languages, and although that option is attested in a handful of languages. Note also that Kwarandzyey has borrowed feature markers on heads, but not agreement markers on verbs or adjectives, even where these would be homophonous, while Siwi's use of borrowed agreement markers on adjectives is very limited. Moreover, despite borrowing Arabic nouns with articles, neither language uses those articles to indicate definiteness. As a whole, the data suggests a hierarchy of morphological borrowability along the following lines:

inherent features > agreement markers

number > gender > person/definiteness

These can both be reduced to a single generalisation:

Inherent aspects of the referent are more easily borrowed than arbitrary or viewpoint-dependent ones.

9.2 Pattern borrowing/change mediated by matter borrowing or semantic calquing

9.2.1 Effects of bound morphology

When free morphemes turn into bound ones through internal change, we would expect them to be bound to a structurally adjacent word. If the morphemes are borrowed, however, we cannot assume that adjacency will apply. When it does not, the replacement of free morphemes with bound ones would be expected to have effects on word order: at the least, any still free morpheme that could previously intervene between them will now have to precede or follow them, and one might expect the new morphemically complex word to occupy one of the syntactic positions formerly occupied by the free equivalents of its members.

There have been a number of attempts to develop this intuition. Within movement-based generative grammar architectures, there has been a tendency to see morphology as reflecting movement to other functional heads. A suggestive case is the analysis of French and English verb position (Pollock 1989): French, where finite verbs take suffixes indicating tense/aspect/mood and even person, would reflect V-to-I movement, while English, with much less verb morphology, would not, leading to adverb position contrasts like *il mange souvent des pommes* vs. *he always eats apples* and *il a souvent mangé des pommes*. This has led to a number of proposals to regard rich agreement as requiring or even triggering raising, as elaborated by Rohrbacher (1999). On a strict lexicalist position allowing feature checking to be satisfied at LF, as in Minimalist proposals (Chomsky 1995), the claimed correlation between morphology and raising can at most be optional, rather than required. However, if morphology is taken to apply

only post-syntactically, as in Distributed Morphology (Halle & Marantz 1993; Marantz 1997), then this may be elevated to the status of a law: the syntax has to unite interpretable bound morphemes with their hosts, by head-to-head movement and/or structural adjacency. (Where only head movement applies, then if the order of morphological operations is taken to reflect it, Baker's (1985) Mirror Principle will follow.) Under the normal assumption that only leftward movement is possible so that traces can be properly governed, then a morphosyntactically complex word should always be pronounced as high as (if not higher than) that of its highest morpheme. If we further assume with Borer (2005) that the inventory and order of functional projections is cross-linguistically universal – an assumption required by learnability arguments, if enough functional projections are postulated to be able to get most of semantic interpretation from them – then the results of this prediction should be cross-linguistically comparable. The data examined here yield a couple of *prima facie* examples of a borrowed bound morpheme with the same function as an inherited free one, providing potential tests of the hypothesis.

The most obvious candidate is numerals and number. While Siwi has borrowed dual and numeral+noun combinations from Arabic, the former at least clearly involving a bound morpheme, the expected syntactic effects are minimal, since numerals and nouns are normally always adjacent in Berber (apart from the genitive marker) anyway. Number in Kwarandzyey, on the other hand, offers two possible comparisons: the dual, and more generally the special measure forms, and the internal vs. clitic plural markers. In every southern Songhay language, adjectives are placed between the head noun and the numeral, and the head noun (unless pronominal) is unmarked for plurality; in Kwarandzyey, numerals are always adjacent to the head noun, following it if short and preceding it if long (to a first approximation), and some head nouns are marked for plurality. Can any of these apparently disparate changes be related to one another?

To allow the dual and other special measure forms to be generated under structural adjacency or head movement, in accordance with DM assumptions, we must suppose that in Kwarandzyey – unlike southern Songhay languages – the head noun ends up either adjacent to or at the head of the “quantity projection” where numerals are

inserted. This also fits the observed fact that, unlike in other Songhay languages, adjectives can never come between nouns and numerals. As seen previously, head plural morphology is in complementary distribution with numerals, but not with the clitic plural marker =*yu*. Let us therefore assume that head plural marking comes from a particular value of the head of the quantifier projection. Assuming that the clitic plural marker is not simply an agreement marker, an assumption seemingly justified by the frequency of nouns without a distinct head plural, it must occupy a higher position than quantity, since it takes scope outside of the quantified phrase and outside of demonstratives. Schematically, then, we have the structure [[[Q [N Adj]] Dem] Pl-*yu*] in Kwarandzyey, versus [[[N Adj] Q] Dem] Pl-*yo*] in Koyra Chiini. To account for the fact that certain numerals – specifically, 1-10 and 100, all monomorphemic – can come between N and Adj, we can postulate head movement of N to Q in these cases, analysing these numerals as suffixes for syntactic purposes (despite the lack of phonological evidence for that analysis); the same must occur for head plurals. Both =*yu* (and KC *yo*) are absent directly after elements already marked for plurality; presumably, this must be treated as allomorphy conditioned by adjacency. Thus the difference in nominal order between Koyra Chiini and Kwarandzyey would be reduced to a change in the position of Q relative to its complement and a change of simplex numerals from free to bound items. However, even under these assumptions the change of Q's complement position cannot simply be justified by morphology; the borrowing of numeral+measure combinations provides a motivation, but the change itself applies even in environments where it is not morphologically motivated.

On the hypothesis that content morphemes have no inherent part of speech (Marantz 1997; Borer 2005), parts of speech being marked by functional heads, the Berber and Arabic nominal markers *a-/tsa-* and *əl-* in Kwarandzyey are also promising candidates for examination; and the optional deletion of *əl-* on many words suggests that speakers do analyse it as a separate morpheme. However, no positional differences have been observed between words with and without these prefixes – and, in fact, southern Songhay languages borrow Berber and Arabic words with the prefixes too (eg KS *alhabar* “news” < Ar. *al-xabar-*, *agažirim* “lizard sp.” < Tm. *agažžārām*), so none would be expected.

Another obvious candidate to examine is the development of bound MAN markers and compound TAM markers in Kwarandzyey; one would expect it to affect verb position relative to the functional positions filled in English by adverbs. Cinque (1999) argues for a cross-linguistically uniform functional hierarchy of adverbs. Mainstream Songhay has both a small number of normally postverbal adverbs (one retained in Kwarandzyey is *tsamba* “early”) and a larger number of functional serial verbs, linked with *ka*, intervening between the main clause's MAN marker and the semantic head verb: KC examples (to cite a case not complicated by the further difference of OV order) include modals such as *hima* (weak obligation) and aspectuals such as *baa* “be about to”, *bey* “have ever”, *faati* “have already”, *yee / filla* “again”, *kokoro* “have recently”... If bound forms require morphological movement, we should expect some of these serial verbs to correspond to adverbs/serial verbs found postverbally in Kwarandzyey, in particular the ones lowest on Cinque's hierarchy, while adverbs postverbal in southern Songhay remain postverbal in Kwarandzyey.

In fact, however, two adverbs that have been integrated into the MAN complex in Kwarandzyey are obligatorily postverbal in Koyra Chiini, “any more” and “yet” (Heath 1999a:260, rendered literally as “again” and “any more”):

<i>ni</i>	<i>si</i>	<i>hin</i>	<i>ka</i>	<i>goy</i>	<i>koyne</i>
2SgS	ImpfNeg	can	Inf	work	again

“You(Sg) can't work any more.”

<i>a</i>	<i>na</i>	<i>hantum</i>	<i>jinaa</i>
3SgS	Neg	write	at-first

“He hasn't written yet.”

This can still be reconciled with the cartographic perspective if we assume that they appear on the verb due to head movement, whereas the adverbs occupy specifiers. However, restricting ourselves to clearly morphologically free items does not avoid difficulties. The lowest un-repeated entry on Cinque's hierarchy is “almost”, so that

appears the natural test case. In Kwarandzyey “almost, nearly” is expressed by *mən* “be near” used as a control verb (compare Algerian Arabic *qrib*), followed by a semantic head verb (finite, of course) marked for the irrealis, eg:

nə-mmən *nə-m-fənd-a*
 2S-**near** 2S-IRR-blind-3S
 You **nearly** blinded him. (2008-02-05/17)

But the same order, with similar control verbs but with a non-finite content verb, is used in southern Songhay:

Zarma: *Hal à m` màanùkân-yan*
 until 3S IRR **near** fall-VN
 “Quand il fût **presque** tombé...” (Sibomana 2008:305, 447)

KC: *A man ka to*
 3S **near** INF arrive
 “Il est **presque** arrivé.” (Hacquard & Dupuis-Yakouba 1897:35)

herey moo baa ka wii yer
 hunger too **want** INF kill us
 Hunger had [also] **nearly** killed us. (Heath 1998a:254)

So in Kwarandzyey, rather than moving up to occupy the main clause's MAN particle's position, the main verb stays low when necessary and gets assigned the irrealis through some other mechanism. Verbs with realis MAN markers, expected to always be higher than such adverbs, appear simply incompatible with them.

Siwi offers one notable possibility: the superlative, marked by borrowed Arabic templatic morphology. The superlative can either take no suffix and precede the noun (a position otherwise filled only by individuating quantifiers like *küll* “each/every” and *'ayy* “any”, not by adjectives), as in *fla drar* “highest mountain” - corresponding, of

course, to the Arabic construction (*'aflā jabal*); or it can take the superlative suffix *-hūm* and follow the noun like other adjectives, as in *adrar fla-hūm* (not available in classical Arabic.) On the face of it, this looks like the opposite phenomenon – the adjective is barred from picking up morphology when it raises. But if the second construction is analysed as appositive, then no movement is involved in either case, and *-hūm* may be seen as standing in for a head noun, in accordance with its pronominal etymology, and thus presumably generated under structural adjacency rather than head movement. This analysis would correctly predict that *fla-hūm* but not *fla* can be used as a standalone nominal with superlative reference.

All of the data examined can thus be reconciled with the notion that bound morphology requires movement or adjacency. However, this notion makes few otherwise unexpected predictions here; and where it does allow seemingly disparate facts to be unified, it has generally been structural adjacency rather than head movement providing the source. The one case potentially analysable as head movement, Kwarandzyey head nouns with numerals 1-10 and 100, could equally be analysed under the assumed syntactic structure with different theoretical assumptions by considering the numerals in question to have become first-position (Wackernagel) clitics; either analysis runs into the problem that there is no phonological evidence that these numbers have become bound, and in fact they can occur free with no apparent difference in pronunciation (except “one”). Thus, while supporting the unsurprising and theory-independent notion that bound morphology can be generated under adjacency, this data appears silent on whether or not morphology needs to assume the relevance or possibility of movement.

9.2.2 Effects of agreement morphology

As discussed above, the presence of rich subject agreement morphology has been claimed to correlate with other syntactic properties, notably the possibility of null subjects for finite verbs and of optional VS order (Kayne 1980). The emergence of rich subject agreement morphology in Kwarandzyey appears likely to be a semantic calque modelled on Arabic and/or Berber. In this data, its emergence in Kwarandzyey correlates well with the emergence of null subjects, as in the model languages, making a

causal link plausible. However, it has not been followed by the general emergence of optional VS order, despite the robustness of the latter characteristic in regional Arabic and Berber.

9.2.3 Effects of lexical parametrisation

9.2.3.1 Complement position

It is clear that some syntactic properties are associated with lexical items – on some accounts, perhaps all, as in the Lexical Parametrisation Hypothesis (Manzini & Wexler 1987). In particular, certain lexical items appear to be associated with particular relative syntactic positions; thus English *ago* follows its complement, whereas *before* precedes it. Within a single language, it is often difficult to tell whether the relevant convention is lexeme-specific, or refers to an independently motivated set of words (or even, redundantly, both.) If the former, it should sometimes be carried in with loans; if the latter, loans replacing members of that set should be subject to it.

This issue has been examined in several sections above, notably for adpositions, quantifiers, and focus particles. For primary adpositions and focus particles, Moravcsik (1978) is vindicated; their placement is consistently kept regardless of whether or not it matches the host language's, suggesting that it is lexically parametrised. Secondary adpositions and quantifiers' position, in contrast, appears to be consistently determined by global rules affecting borrowed items irrespective of their position in the source language. Arabic grammar allows for some ambiguity in whether the source of a particular adposition was primary or secondary; this is usually resolved by borrowing secondary adpositions with a nominal prefix such as the article.

The adpositional results could be reconciled with the hypothesis that there is a Head Parameter set differently for different parts of speech but not for different words belonging to the same word class by taking Kwarandzyey adpositions to be head-initial, and analysing the surviving primary postpositions as case clitics. In that case, adpositional loans would be head-initial not just because they are in Arabic but because

this is the default for modern Kwarandzyey. Secondary postpositions would be treated as nouns, some of which (eg *gaga* “beside”) have slightly unusual syntactic properties. The fact that former postpositions all got reanalysed as case clitics or replaced, rather than simply turning into prepositions, would be seen as evidence that the parameter resetting must have occurred in child learners rather than adult speakers, as argued by Lightfoot (1999) for syntactic changes in general; learners with the new setting would have been unable to correctly analyse such forms in sentences produced by older speakers, and hence would not have learned the postpositions as postpositions. The situation in other Northern Songhay languages is problematic for such a view, since they have larger classes of postpositions not obviously reducible to case marking; to maintain the assumption that there is a single word class of adpositions, the “Head Parameter” would have to be reduced to language-specific (but ideally not word-specific) settings determining whether the complement raises higher than the adposition, so that in Kwarandzyey the complement would have gone historically from moving to SpecPathP (or thereabouts) to remaining in situ.

It is not obvious that a similar account can be made for Siwi focus particles, however; there pre- and post-posed particles can be nearly synonymous and, apart from position, show no signs of belonging to different word classes. If we accept the conclusion that primary adpositions and focus particles are lexically parametrised for the relative position of their complements, then, insofar as semantically motivated generalisations account for most of the data, we would be forced to suppose redundant storage of both global order rules and lexeme-specific order properties; but Croft (2001:121) argues strongly that such “redundant” representations are often motivated and psycholinguistically more realistic. Tomasello's (2006) model of acquisition exemplifies this. For Tomasello, the first constructions a child learns are not purely abstract: instead, they consist either of concrete lexical items alone or of concrete lexical items together with “slots” (specific positions and selectional restrictions) for their arguments. Abstract, more productive constructions (global rules) are created by the child learner later on the basis of such forms, rather than existing from the start. On such an account, lexical entries would always have the option of containing “slots”, providing a natural way for borrowed items whose syntax does not fit the global rules of

the language to retain their own subcategorisation frames and orders.

9.2.3.2 Word class

Synchronically, the borrowing of nominal adjectives into Kwarandzyey seems to exemplify the creation of a new word class as a result of borrowing, uniquely in this data. However, the resulting situation appears unstable in that it looks highly susceptible to reanalysis. At present, all adjectives have the option of using a nominal predication construction; the only difference for these is that, unlike most adjectives, they cannot use the verbal one. If the availability of the nominal predication construction preceded the borrowing of the nominal adjectives, then we could view both as evidence that the old word class of verbal adjectives is being split into two, with the attributive forms being reinterpreted as belonging to the new class of nominal adjectives (used both in predication and attribution) and the corresponding verbal forms that were originally the only way to form predication being reclassified simply as morphologically related stative verbs. If this is correct, then we would expect their meanings to diverge in future generations if the language survives. Alternatively, if the borrowing of the nominal adjectives came first, we could view the reinterpretation of the attributive forms as evidence that the borrowings are provoking such a reinterpretation. Long-term observation over a period of decades would be required to determine whether either of these views is correct.

9.3 Unmediated syntactic pattern borrowing

As seen above, there are many examples here of the adoption of syntactic patterns alongside material borrowing of some of their heads (as with numerals or adpositions.) The borrowing of purely syntactic (as opposed to semantic) characteristics, unmediated by material borrowing, is much less prominent, but has occurred: notable examples are subject agreement in Kwarandzyey, the use of resumptive pronouns rather than gaps in relative clauses in Siwi and in certain contexts Kwarandzyey, and the use of *d* “and” to join clauses in Siwi. However, while these clearly do not involve the borrowing of phonetic material, these can all be viewed as expansions of the syntactic functions of

particular paradigmatic sets of existing lexical items – pronouns to agreement markers, pronouns to gap markers, nominal coordinator to clausal coordinator. In that respect, it seems to be possible to associate all influence in this data set with changes in particular lexical entries. While it is unlikely that such a conclusion can be made universal (contrast the Afghan Arabic case discussed in the Introduction) it would be a matter of some interest to investigate how wide the class of contact situations for which this holds is.

9.5 Concluding remarks

Language contact can exert a very substantial effect on the grammar of a language. However, even in the fairly extreme circumstances examined here, with a small population surrounded by a much larger population speaking a different language and motivated to learn the latter by political, economic, and religious considerations over a period of centuries, it remains possible to disentangle the effects of contact from inheritance, thanks to the fact that influence is not equally likely to affect all aspects of a grammar. The effects of contact themselves, far from merely complicating the investigation, turn out to provide important information on the history of both speech communities which would otherwise be hard or impossible to obtain, such as the Zenaga influence on Kwarandzyey or the non-Sulaymi Arabic influence on Siwi. In much of the world, including large parts of Africa, establishing the correct genealogical tree is rendered extremely difficult by the time depths involved and the frequency of contact. In such circumstances, extracting as much historical information from clear contact phenomena as possible before attempting greater time depths may be the order of investigation most likely to be fruitful.

Appendix 1: Kwarandzyey Swadesh list compared

Distal “that” is not typically lexicalised in Songhay; I have substituted anaphoric “that”. Kwarandzyey has no word for “tree”, so I have substituted “wood” which elsewhere in Songhay is the same word. “Bark” is not strongly lexicalised either (although “palm bark”, the Berber loan *tsaqanəfts* / *tsanaqəf*, is), and attempts to elicit it seem to lead to inconsistent answers, so I have omitted it. For “warm” I have substituted the less ambiguous “hot”. Loans are in grey; 19 of the 99 Kwarandzyey words are loans, leaving only 80 to compare. Another 8 words that are not loans in Kwarandzyey are loans in Tadaksahak, so the comparison with Tadaksahak is based on just 72 words. KC words between angle brackets come from Dupuis-Yakouba (1917). Tadaksahak words followed by * come from Rueck & Christiansen (1999).

Ambiguous cases: for 16, I assume that the Tadaksahak form, like the Zarma one, is a compound containing the same morpheme *wey*, and hence mark it as cognate. On 4, see Demonstratives; I classify it here as cognate across all four. 33 and 42 might be Berber loans into the last common ancestor of Tadaksahak and Kwarandzyey. For reasons discussed under Quantifiers, *kʷəll* is more likely a recent re-borrowing than a reflex of the loan into proto-Songhay. The etymologies of 23, 65, and 79 are unclear; they may be loans, particularly 23.

For calculation purposes, I have counted a word as fully cognate if any of the forms listed for it are cognate. I have omitted all known loans from the calculation, and have not counted related forms whose semantics are different. Loans are marked in light grey; other words not cognate to Kwarandzyey are in dark grey.

This yields:

90% = 65/72 cognates with Tadaksahak (or 93% = 67/72 counting the shared Berber loans);

83% = 66/80 with KC;

81% = 63/80 with Zarma.

The number of loans in Kwarandzyey is minimally 18%=18/99 (excluding “all”) and potentially as high as 24%=24/100 (including unknown etymologies, “name”, and “palm bark”); I will conservatively assume 19%=19/99 (including 9). Of these 19, 8 are from Arabic and 12 from Berber.

		Kwarandzyey	Tadaksahak	Koyra Chiini	Zarma
1	I	aɣəy	aɣay	ay	áy
2	you (sg.)	ni	nín	ni	ní, nîn
3	we	yayu	áari	yer	írì
4	this	uɣu, =ɣu	óoda, áyda	woo	wô
5	that (ana.)	uɣudzi, =dzi	adí	di	dĩn

6	who	tsak ^{wəy}	ci	mey	máy
7	what	tsuɣu	ci	maa	ifò
8	not (impf.)	-s-b-	-sə-	si	sí
9	all	k ^{wəll} < Ar. (proto-Songhay?)	káamil < Ar.	kul (pan-Songhay < Ar.)	kúlù
10	many	-bu, attr. həybbu	babó *	bow, attr. bobo	bòòbò
11	one	affu, =fu	fóoda	afoo	àfò
12	two	inka	hiŋká	ahiŋka	ihiŋká
13	big	bya	bêr	beer	béeri
14	long	-ku, attr. kuku	kukú	kuu	kú
15	small	kədda	ceená	keyna	káyná
16	woman	wəy	surgóy	woy	wəybòrò
17	man	aɾu	aarú	har	àlbòrò
18	person	bə	borá	boro	bòrò
19	bird	tsiruw	cíidaw	čirow	cúró
20	dog	həynši	hánši	haỹši	hánsi
21	louse	gani	geení	gani	gání
22	wood	tsgudzi / sgudzi / skudzi	tugúdu	tuuri	túúri
23	seed	aşu ^{wə} (loan?)	áaḍəm (probably Tuareg Songhay)	dumi, dumarey, duma	dúmí
24	leaf	ifəw < B.	áala < B.	fīta	kóptò

2 5	root	ləzɣa < Ar.	éecaw < B.	<kadji>	kàjí
2 7	skin	kuru	kuurú	kuuru	kùùrù
2 8	meat	ħamu	háamu	basi, ham	hâm
2 9	blood	kudzi	kud-én	kuri	kúrí
3 0	bone	bidzi	biidí	biiri	bìrí
3 1	fat	mani	maaní	maani	máání
3 2	fire	uru	huurú	nuune, tow	dánjí
3 3	egg	tsaff ^w arts < B.	táafult < B.	tondi	gùngùrí
3 4	horn	tšaškəwts < B.	hillí *	hilli	hillí
3 5	tail	ttsabəf < A.	talánkawt < B.	daara	súnfáy
3 6	feather	rriš < A.	áfraw < B.	hambir	hámní
3 7	fish	lhuts < A.	amánana < B.	ham, hari-ham, ham-hari	hámíísâ
3 8	hair	(bəny n) habi	haabén	hambir	hámní
3 9	head	bənyu	baŋgú	bomo	bòŋ
4 0	ear	hənga	haŋgá	haŋa	hángá
4 1	eye	mu	mó	moo	mò
4 2	fingern ail	iška < B.	áškar * < B.	boy	cámsé
4 3	nose	nini	tínžar < B.	niine	niìnè
4 4	mouth	mi	míya	mee	mê
4 5	tooth	tsaymməs < B.	ééšan < B.	hiñe	hiñjè

4 6	tongue	dzini	íiləs < B.	deene	dèènè
4 7	foot	tsi	cáy	cee	cè
4 8	knee	kəŋga	áfud * < B.	kanje	kàngè
4 9	hand	kəmbi	kambá	kamba	kàmbè
5 0	belly	gungu	gungú	guŋgu	gündè
5 1	neck	gəndzi	jinjí	jinde	jìndè
5 2	breast	kankəm	áafaf < B.	fafa	fàfè
5 3	heart	bini	wól < B.	bine	binè
5 4	liver	tsəssa (proto- Songhay, perh. < B)	taašá	tasa	tásà
5 5	drink	nən (nin-)	nín	nin	hǎŋ
5 6	eat	ŋya (ny-)	ŋá	ŋaa	ŋwǎ
5 7	bite	nəm (nam-)	ŋám	nam	námá
5 8	see	gwa (gw-)	guná	guna	dí
5 9	hear	məw	mó	mom	má
6 0	know	bəy (bay-)	báy	bey	báy
6 1	sleep	kani	keení	jirbi	jìrbi
6 2	die	b ^w ən	bún	bun	bú
6 3	kill	wi (wiyy-)	wí	wii	wí
6 4	swim	iʕum < Ar.	yíʕəf < B.	jii	zí

6 5	fly	gəʒ	ʂoʔ	deesi, firri	déési
6 6	walk	zda	didá	dira	dirà
6 7	come	ka	kóy-kat	kaa	kà
6 8	lie (position)	kani	keení	kani	kání
6 9	sit	gwa	goorá	goro	gòró
7 0	stand	kəy	káy	key	kây
7 1	give	na (na-)	ná	noo	nó
7 2	say	tsi (ts-)	cí	har	cî / nê
7 3	sun	inuw	wayní	woyne, woyna	wáynò
7 4	moon	tsəzya < B.	ayyár < B.	handu	hàndú
7 5	star	ətsa < B.	átri * < B.	handarey; saaney Soninke) (<	hàndàrâyze
7 6	water	iri, əyri	aryén	hari	hári
7 7	rain	bəyni	cinjí *	baana	bééné hári
7 8	stone	tsəndzu	ʔondi	tondi	tóndi
7 9	sand	tsəkk ^w əʔəy	tazáazult < B.	dow	táási
8 0	earth	dzəw	gánda	laabu, dow	lààbú
8 1	cloud	iʂəgnu (< B.)	nuunén	<bana, bourey>	búru
8 2	smoke	ɲɲu	nuunén	siisi	dùllú
8 3	ashes	bəzu	booʂí	boosi	bóósú

8 4	burn	təw (təw-)	kurúkurú	kukur	dí / tòn
8 5	road	tsayəzəmts (< B.)	tadáqatt	fondo	fōndò
8 6	mount ain	adəra (< B.)	tóndi *	<tondi ber>	tóndi
8 7	red	tsirəy	cidáy	čirey	cirây
8 8	green	zəgzəg (older speakers) < B.; (lə)xdəɾ (younger) < Ar.	tay	firji	bóogù
8 9	yellow	yəra < B.	yaráy	kara	sáy
9 0	white	kwaɾəy	kóoray	korey	kwàarây
9 1	black	bibi	bíibi	bibi	bî
9 2	night	kikka (at night: kigi)	cijí	čiji	cíini
9 3	hot	k ^w ru	korrá	koron	kórón/n
9 4	cold	yəy	yay *	yey	yáy
9 5	full	tən, attr. tunuw)	tón	ton	tó
9 6	new	tsayəw	yaynáy	taawo	tàjí
9 7	good	hnən, attr. hənnuw	giŋ-gimán	boori, buuri	bòòrí
9 8	round	dəwwəɾ < Ar.	tabulúuleq * < B.	<wanga, windi>	
9 9	dry	qūx, attr. quxuw	qóq	koo	kóógú
1 0 0	name	ma; smiyyət < Ar.	mân	maa	mâ

Appendix 2: Kwarandzyey glossed texts

No Kwarandzyey glossed texts have been published since Cancel (1908). I thus include a small selection of the texts examined in order to give the reader an idea of the corpus and of the structure of the language. All texts are abridged.

Text 1

This text, from 2007-12-21/33, discusses traditional astronomy. The main speaker is an older man from Kwara. Parenthetical comments by his middle-aged relative are italicised.

A: itsənən. a-ba : lluwwəl, a-b-ʦa-tsi ə əḍḍəyf n ʦsa
 star.PL 3S-EXIST first 3S-IMPF-rise-hither uh guest GEN star
 The stars: There's – first, there rises uh the “guest-star” (Venus).

B: a, ḍḍəyf n ʦsa. ləwləw!
ah, guest GEN star bright
Ah, the “guest-star”. Bright!

A: a-b-ʦa-tsi Ø-indza - e... gəddam inəw a-m-yaṛaḥ šwi
 3S-IMPF-rise-hither 3S-COM - eh... before sun 3S-IRR-set a little
 It rises along with – uh – a little before the sun sets.

luxūd inəw a-yyaṛaḥ,
 when sun 3S-set,
 After the sun has set,

B: i-b-ts(i)=a.si əḍḍəyf n ʦsa
 3S-IMPF-say=3S.DAT guest GEN star
They call it the “guest-star”.

A: a-m-ga (a)-mmən əm-... a-m-yaṛaḥ.
 3S-IRR-find 3S-near IRR-... 3S-IRR-set
 it [Venus] will be close to um... setting.

a-m-dri... ʃlaxaṭəṛ ʃlaš? ə...
 3S-IRR-go... because why?[Ar] uh
 It will go... because of why? Uh...

i-bab-tsi lūxxūd ə uyudzi, zzman, lūxxūd ʦsa=dzi
 3P-PROG-say when uh DEM.ANAold days when star=ANA
 They say when uh that, in the old days, when that star -

B: ggə n-ba-yʃaḍ ba=ka
 PAST 2S-PF-invite person=LOC
you were invited to a person's place

A: a-a-tsəndzi, a-a-təndz ana (a)-kka dif, a-kka ə... bʕid
 3S-PF-still, 3S-PF-still 3SEmph 3S-come guest 3S-come uh... far
 was still (up) – it's still (up), (if) there came a guest, he came... uh... far,

xüdz a-kka, əgga ʔsa=dz a-s-küm- ə... yyarəh, yaʕni saʕa,
 when 3S-come, PAST star=ANA 3S-NEG-yet- uh... set ie time
 when he had come, (if) that star has not yet set, ie there's time,

xəss ə an kwəy a-m-tnu,
 must uh 3S.GEN owner 3S-IRR-get up
 then its owner must get up,

a-m-hnə-ndz=a.s an ʔazu.
 3S-IRR-go out-CAUS=3S.DAT 3S.GEN dinner
 he must bring out his dinner.

nə-s-b-gis-ana a-m-kan bla ʔazu
 2S-NEG-IMPF-let-3SEmph 3S-IRR-sleep without dinner.
 You don't let him sleep without dinner.

əddəyf ann-aʕni a-bbəy, a-bbəy ə::: ttsuqits, a-bbəy lwəqt
 guest 3S.GEN-meaning 3S-know 3S-know uh...timing 3S-know time
 The guest by this token knows, he knows uh... the timing, he knows the time.

xüdz agga ʔsa=dzi a-yyarəh,
 when PAST star=ANA 3S-set,
 After that star has set,

B: a-m-bəy bəlli əxləʕ.
 3S-IRR-know that finished
 He'll know it's over.

A: a-m-bəy xləʕ, a-s-b-hur-ts kwərə=si.
 3S-IRR-know finished, 3S-NEG-IMPF-enter-hither town=DAT
 He'll know it's over, he won't go into town/Kwara.

a-aʕam-bəy bə=i-kkani
 3S-FUT-know person=3P-sleep
 He'll know that people have gone to sleep.

madam ə: ʔsa=dz a-s-küm-yaʕəh, a-m-hur-tsi,
 while uh star=ANA 3S-NEG-yet-set 3S-IRR-enter-hither
 As long as that star has not yet set, he'll come in,

a-m-bəy bə=i-ba-tsəndz i-ggwa, a-m-hina a-m-ka
 3S-IRR-know person-3P-PF-still 3P-sit 3S-IRR-can 3S-IRR-come
 he'll know that people are still sitting up, he can come

bə=i-m-gwi=a.s an taz a-m-γa
 person=3P-IRR-cook-3S.DAT 3S.GEN dinner 3S-IRR-eat
 and people will cook him his dinner and he will eat.

tsiwnəs, ləmsabiḥ a-m-ṭṣa.
 Maghrib Orion's Belt 3S-IRR-rise
 At Maghrib time [sunset prayer], Orion's Belt will rise.

[interval, greeting newcomers.]

A: mənbəʃd ə: ləmsabiḥ, əṭṭrəyya a-m-ṭṣa-tsi.
 after uh Orion's Belt Pleiades 3S-IRR-rise-hither.
 After Orion's Belt, the Pleiades will rise.

xəd ṭrəyya (a)-ṭṣa, γuna (a)-m- ə- γuna (a)-m-ka-
 when Pleiades 3S-rise, whatsit3S-IRR- uh whatsit 3S-IRR-come
 After the Pleiades have risen, whatsit, uh, whatsit will come -

ə:::... əlṣayyub. əlṣayyub ə: a-b-ikun an gama indza
 uh... Aldebaran. Aldebaran uh 3S-IMPF-be 3S.GEN between 3S+and
 uh... Aldebaran. Aldebaran, there is between it and

ṭrəyya ə ḥsab ə saʃt-əyn hakkak
 Pleiades uh about uh hour-DUAL thereabouts
 the Pleiades about uh two hours or so.

a-b- ə a-b-ṭṣa-ts a-b-idwə
 3S-IMPF- uh 3S-IMPF-rise-hither 3S-IMPF-shine
 It, uh, it rises and shines.

B: tsuy i-b-tsəlla, ṣayyub?
 what 3P-IMPF-*seek* Aldebaran?
 What are they looking for, Aldebaran?

A: lṣayyub. lṣayyub, i-b-ṭṣa-ts rəbṣa. rəbṣa...yak? aṭsa rəbṣa.
 Aldebaran. Aldebaran, 3P-IMPF-rise-hither four. four... get it? star four.
 Aldebaran. Aldebaran rises as four [the Hyades]. Four... you get it? Four stars.

B: aha inṣa=dzi?
 what about three=ANA
 What about those three?

A: i-b-ka, aṭsa rəbṣa i-b-ka...
 3P-IMPF-come, star four 3P-IMPF-come
 They come, four stars come.

B: ayinṣ(a) i-b-kəy...
 three 3P-IMPF-*stand*

Three stand...

A: ləmsab(i)h in(i). uɣudz=yu msabih. msabih.
Orion's Belt 3PEmph. DEM.ANA=PL Orion's Belt. Orion's Belt.
They're Orion's Belt. Those are Orion's Belt. Orion's Belt.

Text 2

In this text (2007-12-22/12), an older middle-aged man from Kwara explains to me how to make tea the Saharan way, then has a laugh about the likely impact of proper Saharan-style tea on people who haven't tasted it before.

atsəy: lūxxūd nə-ddər landan=si, nə-m-dza nən şşiniyya
Tea: when 2S-go London=DAT, 2S-IRR-put 2S.GEN tray
Tea: after you've gone to London, you put down your tray,

nə-m-bəy aɣəf məssəx məsd ʕa-ab-gwə,
2S-IRR-break cross-legged thus thus.ANA 1S-PROG-sit
You sit down cross-legged like this, the way I'm sitting,

nə-m-bəy aɣəf məssəx, nə-mm-iźbəd-t nən şşiniyya
2S-IRR-break cross-legged thus 2S-IRR-pull-hither 2S.GEN tray
You sit down cross-legged like this, you pull your tray over

nə-m-gwə-ndz-a, nə-m-ts=i.š wə-nna-ɣəy gnəy=yu!
2S-IRR-stay-CAUS-3S 2S-IRR-say=3P.DAT IMP.PL-give-1S utensil=PL
and put it down, you tell them "Give me the utensils!"

nə-m-gwə-ndza nən şşiniyya,
2S-IRR-stay-CAUS 2S.GEN tray
You put down your tray,

wə-nna-ts-ɣəy lqəʕa ndza lbə- lɣəllay=yu
IMP.PL-give-1S canister and ke- teapot=PL
"Give me the gas canister and the ke- the teapots!"

nə-m-gwə-ndz-i nən gaga, nə-m-gwə-ndza nə(n) lbərrad
2S-IRR-stay-CAUS-3P 2S.GEN beside, 2S-IRR-stay-CAUS 2S.GEN kettle
You put them beside you, you put down your kettle,

nə-m-m^wən=a.ka ləwɾəg, nə-m-xəlt-a mliħ,
2S-IRR-pour=3S.LOC tea leaves 2S-IRR-mix-3S well
You pour in the tea leaves, you mix it well,

nə-m-dzam-(a) ur=ka a-m-dəffa šwəy,
2S-IRR-put-3S fire=LOC 3S-IRR-warm a little
You put it on the fire to warm a little,

nə-m-yər nə-m-xəwwd-a mliħ nə-m-mun-a.
 2S-IRR-do again 2S-IRR-stir-3S well 2S-IRR-pour-3S
 You stir it well again and pour it out.

i-b-ts=as təšlal.
 3P-IMPF-say=3S.DAT rinsing
 They call it “rinsing”.

ššlaləts. lüxxüd n-yiqdā, nə-m-m^wən ə:- nə-m-n-a a-f^v=s
 rinsing when 2S-finish 2S-IRR-pour uh 2S-IRR-give-3S ABS-
 one=DAT
 “Rinsing”. When you're done, you pour uh you give it to someone

a-m-mwən-ts uyudzi; nə-m-ṭə(n) əlbərrad nə-m-gwā-ndz-(a)
 3S-IRR-pour-hither DEM.ANA 2S-IRR-fill kettle 2S-IRR-stay-CAUS-3S
 to pour that out; you fill the kettle and put it

ur=ka a-m-rəhha a-mm-itbəx. nə-m-n=a.s ur mli:ħ (x5)
 fire=LOC 3S-IRR-busy 3S-IRR-boil 2S-IRR-give=3S.DAT fire well
 on the fire to get busy boiling. You give it fire well, well, well, well, well,

mʕad a-m- a-mm-itləg. nə-m-dza sskkwaṛ lbərra- əlka=ka,
 until 3S-IRR- 3S-IRR-release 2S-IRR-put sugar kett- cup=LOC
 until it starts letting out (steam). You put the sugar in the ket- in the cup,

ndzūy a-s-b- ə: sskkwaṛ a-s-b-yaʕ- a-s-b-kən=ni.s
 so that 3S-NEG-IMPF- uh sugar 3S-NEG-IMPF-r- 3S-NEG-IMPF-fall=2S.DAT
 so that the sugar doesn't r- doesn't fall (adversely affecting you)

əlbərrad=ka, nə-m-zu ssükkwaṛ nə-m-mun-a lkas=ka
 kettle=LOC 2S-IRR-take sugar 2S-IRR-pour-3S cup=LOC
 into the kettle, you take the sugar and pour it into the cup.

nə-m-gwəb- nə-m-gwəb-xəllət, ndzūy a-b-xəllət mliħ.
 2S-IRR-INCEPT- 2S-IRR-INCEPT-mix so that 3S-IMP- mix well
 You start- you start mixing, so that it gets well-mixed.

aywa nə-m-nin-a
 well 2S-IRR-drink-3S
 Well then, you drink it.

nə-m-ṭəb-a, nə-m-yər nə-m-gwā-ndz-a
 2S-IRR-taste-3S 2S-IRR-do again 2S-IRR-stay-CAUS-3S
 You taste it and put it back down.

nə-m-gwa ssükkūr ba-xxašš nə-m-yər nə-m-ṭəttən=a.ka
 2S-IRR-see sugar PF-lack 2S-IRR-do again 2S-IRR-add=3S.LOC
 You see that there's not enough sugar, you put some more in.

nə-m-yər nə-m-xəl- nə-m-yər nə-m- nə-m-təttən
 2S-IRR-do again 2S-IRR-mi- 2S-IRR-do again 2S-IRR- 2S-IRR-add
 You again mi- you add some more

nə-m-xəlld-a nə-m-xəwwd-a mlih. a-m-yəfyā.
 2S-IRR-mix-3S 2S-IRR-stir-3S well 3S-IRR-tired.
 and mix it and stir it well. It'll get tired.

nə-m-yər nə-m-m^wən, nə-m-ṭab-a a:h
 2S-IRR-do again 2S-IRR-pour, 2S-IRR-taste-3S aah!
 You pour it again, you taste it – aah!

nə-m-dz=a.s | mlih! he: nə-m-gwā-ndz-a.
 2S-IRR-do=3S.DAT [dental click] well! heh 2S-IRR-stay-CAUS-3S
 You go “Tsk – good!” Heh, you put it down.

ayya, nə-m-m^wən=i.ši əlkisan
 well, 2S-IRR-pour=3S.DAT cups
 Well then, you pour them cups.

i-m-nən, küll-ha, ʕar i-b-nən əlluwwəl, əzzawəj - əlbunya
 2S-IRR-drink everyone just 3S-IMPF-drink first second fist
 They drink. Everyone, as soon as they're drinking the first one, the second one –
 fisticuffs!

[laughter] gal ə- gal aγəy-
 [laughter] QUOT uh QUOT 1S
 [laughter] They'll say uh they'll say “I-”

nə-m-gwa i-m-gwəb-nəggəz, gal wə-nna-γ ʕa(n) lkas
 2S-IRR-see 2S-IRR-INCEPT-jump QUOT IMP.PL-give-1S 1S.GEN cup
 You'll see them start jumping, saying “Give me my cup!”

[laughter] bə=i-m-gwəb-nəggəz! “na-γəy ʕa(n) lkas, a?”
 [laughter] person=3P-IRR-INCEPT-jump! “give-1S 1S.GEN cup huh”
 [laughter] People will start jumping! “Give me my cup, huh?”

bə=i-m-bəyby-i, wəh. [laughter] a: uyudz=ana
 person-3P-IRR-break.PL-3P yes [laughter] ah DEM.ANA=3S.Emph
 People will break them into pieces, yeah. [Laughter]. Ah, that's it.

uy=nnin-a, uy=təb=a.tsa uyū, a-m-gwā ʕar a-b-nəggəz
 REL=drink=3S REL=taste=3S.LOC DEM 3S-IRR-sit only 3S-IMPF-jump
 Whoever drinks it, whoever tastes of it, this, he'll start just jumping,

wəlla i-b-bəyby=ni.s lkisan küll.
 or 3S-IMPF-break.PL=2S.DAT cups all

or breaking all your cups.

kwəll-ha a-m-ts “aγ=á mməy lkas=γu,
everyone 3S-IRR-say 1S=FOC own cup=DEM
Everyone will say “This cup is *mine!*”

gal gwa-ndz-a, høndza n=a mmay-a,
QUOT stay-CAUS-3S NEG.FOC 2S=FOC own-3S
They'll say “Put it down, it's not yours,”

gal aγ=a ʕa(n) lkas=aγ wəlla ʕa(n) lkas=adzi
QUOT 1S=FOC 1S.GEN cup=ID.PROX by God 1S.GEN cup=ID.ANA
they'll say “This is *my* cup, by God that's my cup,”

i-m-nəggz=a.ka küll-h(a) a-m-yər a-m-nəggəz a(n) lkas=ka
3P-IRR-jump=3S.LOC everyone 3S-IRR-do again 3S-IRR-jump 3S.GEN cup=LOC
they'll jump on it, each one will jump on his cup

i-b-nin-a. aywa tshəlla,
3P-IMPF-drink-3S well take care,
and drink it. Well, take care –

əlmuhimm id ʕa-t=ni.s bəly-a yak nə-mməw?
important all that 1S-say=2S.DAT pass on-3S got it 2S-hear
the main thing is, pass on all that I've told you, alright – you hear?

Text 3

In this text (2007-12-06/AM), a younger middle-aged man from Kwara discusses why he didn't go to school in his youth. The interviewer is a young man, also from Kwara.

A: tsuγ=a yəʕra=ni.si?
what=FOC happen=2S.DAT?
What happened to you?

B: a, əgga-γi kədda-bbunu uxlaş. ləħmad ba-yəʕžə-
ah PAST-1S small-tiny that's all hamada PF-pleas-
Oh, I was just tiny, that's all. I liked the hamada [the open desert outside the oases] -

ləħmad ba-yəʕžəb=γəy.si ʕa-hhənga ləħmad.
hamada PF-please=1S.DAT 1S-follow hamada
I liked the hamada, so I followed the hamada.

A: la, bəʕʕəħħ nə-ħhur likul tsara=fu nə-hnu.
no but 2S-enter school time=one 2S-exit
No, but you entered school once and then left.

B: walu a wəddi, ʕar tsara=fu ʕa-yyər-tsi

no man just time=one 1S-return-hither
 No, man, just once and then I came back.

A: tsakw=a hnu-tə-ndza-ni?
 who=FOC exit-hither-CAUS-2S
 Who took you out?

B: ah? walu, aʔi ʕa-hnu-ts ʕan -
 huh? no, 1S 1S-exit-hither 1S.GEN
 Huh? No, I left on my-

A: nn hasi?
 2S.GEN alone
 On your own?

B: iyyəh. əgga iʂn=i-ba-ʕaʔrəm, əgga y-ab-israħ tsawala -
 yes PAST ovine=3P-PF-plentiful PAST 1P-PROG-graze communal herd
 Yeah. There used to be loads of sheep+goats, we used to graze the communal herd -

A: əgga lxir ba-ttən=ndzi.si
 PAST plenty PF-full=2P.DAT
 You used to have plenty.

B: əgga a-a-ʕaʔrəm.
 PAST 3S-PF-plentiful
 There was plenty.

A: əgga lxir ba-ttən=ndzi.si
 PAST plenty PF-full=2P.DAT
 You used to have plenty.

B: əgga lxir ba-ttən, huwwa=ʔu ndza gi ndza... küllš ba-ʕaʔrəm
 PAST plenty PF-full milk=DEM and ghee and... everything PF-plentiful
 There was plenty, this milk and ghee and... everything was plentiful.

A: tsa- tsawala gga ttən?
 h- herd PAST full
 Th- the communal herd was full?

B: ddu a-s-ba=ya.si əgga y-ab-
 light 3S-NEG-EXIST=1P.DAT PAST 1P-PROG-
 We had no light, we used to -

y-ab-dəwwi ʔaʔ ndza lqəndir
 1P-PROG-light just INST candle
 we used to make light just with a candle.

A: qəndir iyyəh – zzman-k^wəy -
 candle yes old days-owner -
 A candle, yeah – people of the old days -

B: tsəlləs, bəşşəh a-m-ga nən mu=i-ba-yəşha!
 darkness, but 3S-IRR-find 2S.GEN eye=3P-PF-healthy
 Darkness, but your eyes would be found strong!

nə-m-dər aḍa=f=si nə-m-dər n-b-hərrəm əlhažt -
 2S-IRR-go place=one=DAT 2S-IRR-go 2S-IMPF-carry thing
 You'd go to some place, you'd go carrying something -

A: wə zman-k^wəy=yu məsdi a-ggər-a küll məsdi
 yes old days-owner=PL thus.ANA 3S-find-3S all thus.ANA
 Yeah, people of the old days, for them it was all like that.

i-b-ənğa γəyr uru n ənğa=yu
 3P-IMPF-eat just fire GEN eat=PL
 They would only eat fire(-cooked) foods.

B: iyyəh. aγəm- aγəm=fū awa a-m-kər-a, mən aḍayu a-m-
 yes. bread- bread=one well 3S-IRR-break-3S from here 3S-IRR-
 Yeah. One- one (piece of) bread, well, he'd break it, and from here he'd

tnu, a-b-zru a-b-zru mʕad amrər n ldaxəl
 get up 3S-IMPF-run 3S-IMPF-run until erg GEN inside
 get up and run and run all the way to inside the erg (field of sand dunes).

Sources:

Unless otherwise indicated, data from the following languages is from the following sources:

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Awjila	Paradisi (1960) and (1961)
Cyrenaican Arabic	Owens (1984)
Dendi (Djougou)	Zima (1994)
Douiret	Gabsi (2003)
Egyptian Arabic	Hinds & Badawi (1986)
El-Fogaha	Paradisi (1963)
Figuiq	Kossmann (1997) and Sahli (2008)
Ghadames	Lanfry (1973)
Kaado	Ducroz & Charles (1978)
Kabyle	Dallet (1982)
Koyra Chiini	Heath (1999a)
Koyraboro Senni	Heath (1999b)
Medieval Nafusi	Lewicki (1934)
Middle Atlas forms	Taifi (1991)
Nafusi	Beguilot (1931)
Ouargla	Biarnay (1908)
Sened	Provotelle (1911)
Tamezret	Stumme (1900)
Tasawaq	Kossmann (2003)
Tadaksahak	Christiansen-Bolli (2010)
Tamasheq	Heath (2005a)
Tashelhiyt	Aspinion (1953)
Taznatit	Boudot-Lamotte (1964) and Bellil (2006)
Tondi Songway Kiini	Heath (2005b)
Zarma	Lexicon: Bernard and White-Kaba (1994) Grammar: Tersis-Surugue (1981)
Zenaga	Taine-Cheikh (2008a)

Algerian Arabic is usually the author's; Prémare's (1993) dictionary is used where indicated. For Classical Arabic, obscure words are taken from Lane (1863) and Ibn Manḍūr (1955), while better-known ones are the author's.

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