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Modern developments in the Dinka language

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Preface

This text has been written in partial fulfillment of the requirements for the graduate course *An African language* at the doctorate programme in African languages at the Department of Oriental and African Languages, Göteborg University.

I would like to express my gratitude to Karsten Legère and Leoma G. Gilley for providing valuable comments. I am also very grateful to Lino Kiir Kuony for compiling a Dinka word list, on which some parts and sections below have been based. Any mistakes or shortcomings are, of course, my own responsibility.

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Abbreviations used

ADJ	adjective
AM	Abu-Manga (1993); see appendix 2
Ar.	Arabic
DLIA	The Dinka Language Institute of Australia
DLT	Dinka Literacy Texts; see appendix 2
Eng.	English
GEN	genitive
It.	Italian
INES	inessive
LKK	Kuony (2003); see appendix 2
N	noun
ND	Nebel (1979); see appendix 2

1 Introduction

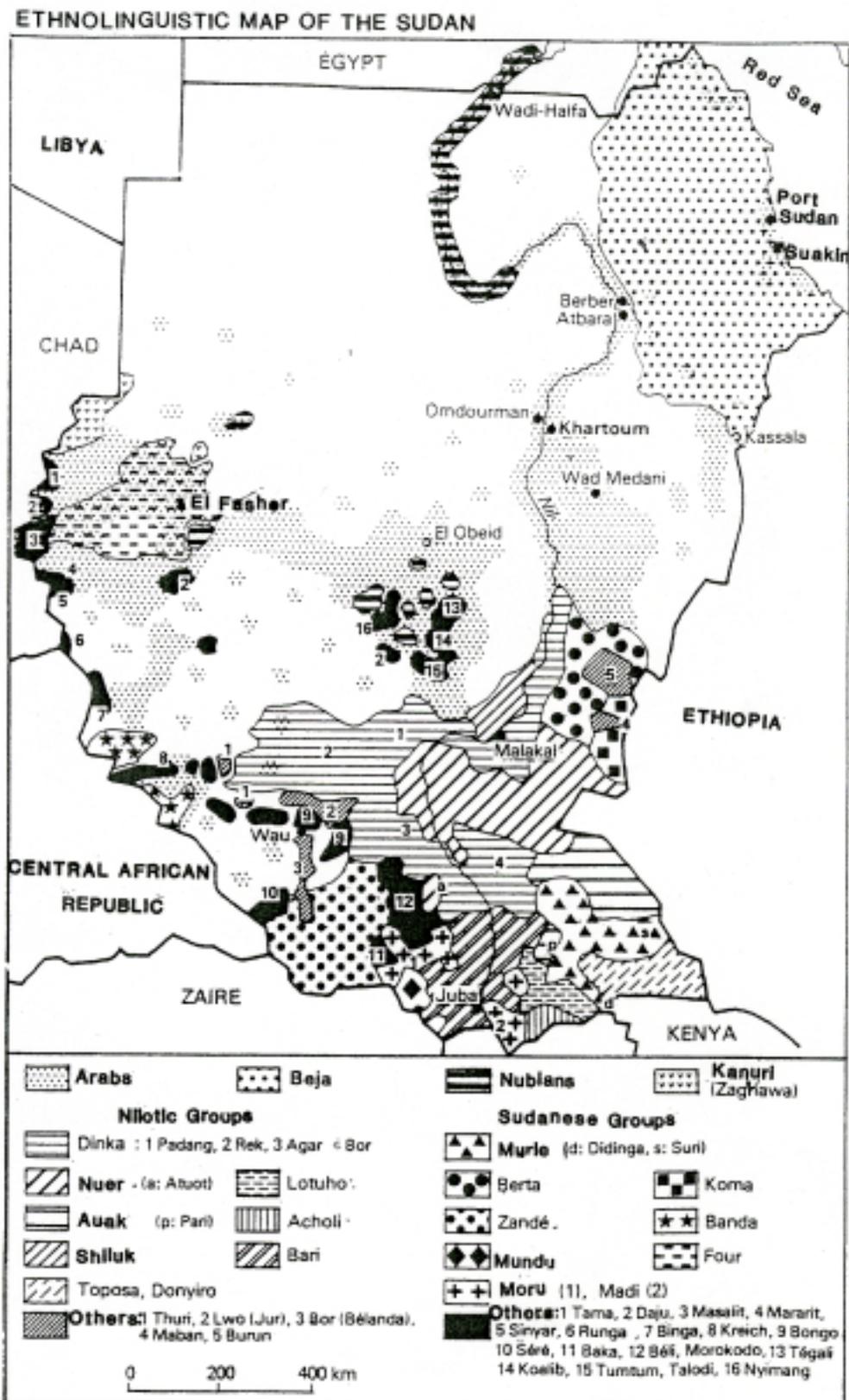
The Dinka language (or, *thuɔŋjäŋ*) has the largest number of speakers of all the more than 100 African languages spoken in Sudan (Abu-Manga 1991:8). Arabic, however, plays a dominant role as the mother tongue, second language and lingua franca of the majority. Besides that, the status of Arabic as the only official language in the country is leading to a decreasing use of other Sudanese languages. Not surprisingly, the impact of Arabic has led to an integration of quite a number of Arabic loanwords in most of the Sudanese languages, including Dinka.

This paper highlights vocabulary expansion and corpus development in the Dinka language. These processes include both borrowing of Arabic and English terminology as well as inventions through translations, semantic shift, phrase grouping and compounding. Considering the sociolinguistic situation in Sudan, it is vital for a language, if it is to survive, to be reduced to writing and standardized. A very important issue of current interest within the Dinka speech community, in Sudan and in exile, is the establishment of an adequate orthography and the promotion of literacy in the Dinka language for future use in society.

Thus, this paper aims to give an account for the development of the Dinka language in modern times, with a short overview of earlier linguistic studies in Dinka and language policy in southern Sudan.

1.1 The Dinka (Jiëng) language

Dinka is classified as an Eastern Sudanic language of the Nilo-Saharan phylum according to Greenberg's classification of African languages (Greenberg 1963:85). It is closely related to Nuer, which together with Dinka constitutes a sub-group of the Western Nilotic languages. Dinka is spoken in the central part of southern Sudan, along the White Nile and its tributaries (Malou 1983:123). The area extends from Renk in the Upper Nile State (in the north-eastern part of southern Sudan) to Bor in Jonglei State (further south) and from Rumbek in El Boheirat



“Ethnolinguistic map of the Sudan”
 (from Abu-Manga & Miller 1991:127)

State to Aweil in the western part of North Bahr al Ghazal State.¹ In 1997 the number of Dinka speakers was estimated to be 2 740 900, a figure worked out by conversion from the 1956 to the 1993 Population Census in Sudan (Abu-Bakr & Abu-Manga 1997:3).

The Dinka language is divided into four dialect groups: Padaang is the northern group, while Rek, Agaar and Bor constitute the western, southern and eastern groups respectively. Padaang has 12 sub-dialects, while the three other dialects have 4-5 sub-dialects each (Kuony 2004). The Dinka dialects, as all other dialects in general, have grammatical, lexical and phonological differences. The average of lexical similarity between the dialects is between 84-92%.²

The use of different dialects has changed over time. Factors like contact with groups speaking other dialects, establishment of administrative centres, education and prestige have influenced the flexible use of different Dinka dialects. The task of choosing one variant for a unified written Dinka language has been a sensitive issue (Malou 1983:129-133). Studies of Dinka dialects have been published by the SIL International (Roettger & Roettger 1989 and Duerksen 1997).

The Dinka people's autonym of their language is *thuɔŋjäŋ*, meaning 'mouth of jäŋ' (i.e. 'language of the people'). According to Müller (1877a:48), the term Dinka is formed out of the word *džyen'-ke*. The first part, *džyen'*, is the actual name of the people, while *-ke* is a rare plural suffix used in the northern parts of the traditional Dinka area. It was there that the Dinka language was encountered and given its now-common name by foreigners, i.e. Arabs, Turks, European missionaries and colonizers, who all came from the North. Due to the lack of a standardized orthography, a number of different spellings of the name of the Dinka people is found in the literature, for example: *džyen'* (as Müller above), *jäŋ*, *jeŋ*, *jieŋ*, *jaŋ* or *jiëëng*.

Some of the characteristics of the Dinka language include the following:

- 1) A monosyllabic structure: CVC or CV are preferred.
- 2) Consonants clusters are avoided.

¹ In 1991, a federal decree divided Sudan into 9 states (*wilaayaat*). Generally, the borders and names of the states were similar to the traditional provinces of Sudan. In 1994, the 9 states were divided into 26 states.

² <www.ethnologue.com/show_country.asp?name=Sudan>

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- 3) Two different voice qualities in vowels: “breathy” and “non-breathy” (or “creaky”) vowels.
- 4) Three phonetic vowel lengths: short, medium-long and long.
- 5) Three tones: high, low and falling (Andersen 2001:2). The existence of a falling tone is not totally clear as yet, according to Gilley (e-mail 10 Aug 2004), but may be a sequence of H and L. Much work is still needed on this topic.
- 6) A nominal system with an underlying neutral form that may be singular or plural with marked forms that are the opposite. In Dinka, when there is a long vowel in the singular and a short vowel in the plural, then the unmarked form is the short one and the long one is marked. These are usually based on semantics, if the thing comes in plural more commonly (like ‘hair’) then the singular is marked (Gilley e-mail 10 Aug 2004).
- 7) A complex non-linear morphology: derivations and inflections in monosyllabic words are expressed by vowel alternations in the stem, i.e. changes in vowel length, voice quality and tone. (One word can have several morphological layers simultaneously, such that each one contributes phonologically to the word.) Nouns before some adjectives, possessive pronouns and the numeral ‘one’ as well as in the determinative form also undergo the above vowel changes. Vowel alternation is an important feature in nominal plural formation.
- 8) Nasalization (regressive assimilation) of final semi-vowels and certain consonants that occurs before adjectives, possessives and demonstratives as well as in relative and genitive constructions.³

Final plosives of singular nouns:

-p	>	-m
-t	>	-n
-t̥ <th>	>	-ṅ <nh>
-k	>	-ŋ
-c	>	-jɪ <ny>

³ See appendix 1 for the orthographic and phonetic features of Dinka.

Final semivowels: -y <u> > -n
 -w <i> > -n

- 9) The numeral system is based on 10 (*thiäär*). Numerals are positioned after the nouns. Nouns before the numeral for ‘one’ *tök* are nasalized according to point 8 above. For example, the tens, like ‘twenty’, ‘thirty’ etc, are expressed as ‘two tens’ *thiär rou*, ‘three tens’ *thiärdiäk*, etc. Some numerals below 10 are based on ‘five’, e.g. ‘seven’ *dhorou* and ‘nine’ *dhoḡuan* are expressed as 5+2 (*dhiäk + rou*) and 5+4 (*dhiäk + ḡuan*), respectively.
- 10) No grammatical gender.
- 11) There are two moods in the verbal system: indicative and relative-interrogative (including subjunctive and imperative).
- 12) The tenses, other than present, are expressed by auxiliary particles: perfect *cī*, future *bě* and habitual *ye*.
- 13) Verbs do not change with person.

In short, Dinka is a highly fusional language with many words being monosyllabic. It has a complex vowel system with a number of different vowel alternations, which play an important grammatical role.

1.2 Arabic influence and language policy in Southern Sudan

The Arabic language has influenced Dinka since the 19th century, mainly through Arabic-speaking traders. During the first decades of Turco-Egyptian rule (1821-1850), the South was annexed to the rest of the country. Later semi-military centres for trade in ostrich feathers, ivory and slaves were established. Communication needs in these multilingual and multiethnic centres resulted in the emergence, development and spread of a pidgin form of Arabic.

The British colonial rule attempted to hinder the spread of Arabic and Islam by the Closed District Ordinance Act from 1920 and by the Southern Sudan Policy, implemented from the 1930’s. The policy prohibited any sorts of contacts or interactions between northern and southern Sudan. Education in southern Sudan

was entrusted to Christian missionaries, who were to conduct teaching in nine of the southern Sudanese languages recommended by the Rejaf Language Conference of 1928. At the same time, the attempt on the part of the British to develop a number of southern Sudanese languages hindered the development of any of them as lingua franca. Therefore Arabic plays its role as a language of wider communication.

At the Juba Conference, convened by the British colonial administration in June 1947, southern and northern representatives met for the first time to discuss the future of an independent united Sudan. As a result of the conference the Southern Sudan Policy was abolished and Arabic was to be promoted with an objective to overcome the socio-economic and educational gap between the North and the South.

In 1950 Arabic was re-introduced in all southern schools as a subject, with a view to replacing both southern Sudanese languages and English as medium of instruction in the future. The intention was to gradually integrate the system of education in southern Sudan into the national system (Abu-Bakr 1978:200).

After independence in 1956 Arabic was established as the official language of Sudan. A civil war broke out the same year in southern Sudan between the Southern Sudan Liberation Movement and the government in Khartoum. This first civil war ended in 1972 with a peace agreement in Addis Ababa. This signed document recognized English as the principal language for southern Sudan, to be used side by side with Arabic. The major southern Sudanese languages were also to be reintroduced in the first years of primary school (Abu-Manga 1993: 133-134).

The Addis Ababa Agreement on the Problem of South Sudan addressed the language issue as follows (from Wai 1973: 226-227, 230-231):

Chapter III, article 6:

Arabic shall be the official language for the Sudan, and English the principal language for the Southern Region without prejudice to the use of any other language or languages which may serve a practical necessity or the efficient and expeditious discharge of executive and administrative functions of the Region

Chapter V Legislature, article 11:

The People's Regional Assembly shall legislate for the preservation of public order, internal security, efficient administration and the development of the Southern Region in cultural, economic and social fields and in particular the following:

[*inter alia*]

vi) Promotion of local languages and cultures

Chapter IX Other Provisions, Appendix (A) Fundamental Rights and Freedoms:

The following should be guaranteed by the Constitution of the Democratic Republic of the Sudan:

[*inter alia*]

6. Freedom of minorities to use their languages and develop their culture should be guaranteed

In 1986 the second civil war broke out between the southern Sudanese movement, SPLA, and the government in Khartoum. The Dinka community has been severely affected by this war. Many were killed or displaced. Their traditional way of life has been disrupted economically and culturally. Many migrated to urban centres in northern Sudan, where they live as refugees. There are also many Dinka refugees abroad, in neighbouring African countries and in the USA, Canada, Australia and the UK. Migration and urbanization within Sudan have led to an extensive exposure to Arabic and, consequently, an increasing use of Arabic, especially among the young generation (Abu-Manga & Miller 1991:195). Bilingualism in Dinka and Arabic is common among urban mother tongue speakers of Dinka, as Arabic is generally used as the only medium of instruction in schools and dominates the mass media. Most educated Dinka are trilingual in Dinka, Arabic and English.

The language policy favours Arabic to be used for parliamentary debates and stipulates Arabic for writing of laws, although all Sudanese laws are also translated into English. Arabic is the sole official language of administration in almost 80% of the states of Sudan, i.e. excluding those situated in the extreme South, where English is used in varying degrees. The press is dominated by Arabic. There are no newspapers or magazines in other Sudanese languages at all. One daily newspaper

and one monthly magazine are issued in English. The major language in radio broadcasts is Arabic. Other languages, like Dinka, Beja, Nuer, Nyimang, Hausa, Fulfulde and Shilluk, are used for broadcasting a few hours per week in national or provincial radio stations. The National Television in Omdurman has 44 regional branches, but none of them broadcasts in any language other than Arabic (Abu-Bakr & Abu-Manga 1997: 4-5, 9-12).

Muotassim Fadl, the Director of Radio Omdurman (the national radio station in Sudan), whom I interviewed in 2001, confirmed the above statements. He added that the regional radio stations also broadcast in English and Juba Arabic (the pidgin Arabic of southern Sudan). Moreover, ethnic radio stations are forbidden by law (Moutassim Fadl, pers. comm. January 2001).

In 1990 a new educational policy document was passed by the Cabinet of Ministers. This policy was recommended by the National Dialogue Conference on Peace Issues ⁴ in 1989 in the form of Resolution No. 27 under the sub-title Expression of Cultural Diversity. The statements concerning mother tongue education are quoted below:

a) Education

1. Educational planning should be federal and its functioning, staffing and institutions should cater for realities of cultural diversity in the Sudan.
2. Educational planning, in this context, should consider the historical experience of the Arabic language as a mother tongue of a big Sudanese group, as well as being the official language since the time of Independence in 1956, and employ it in education to the extent which may well serve these roles.
3. Educational planning should consider, in this context, the historical experience of the English language as one of special status in the Southern Region, and as a language of communication in our country in general, and employ it in education to the extent which may well serve these roles.
4. Educational planning should consider, in this context, the local dialects (i.e. mother tongue) and adopt the educational wisdom of beginning

⁴ <www.sudani.co.za/Peace%20Effords/letter%20embassy.htm>

education with a mother tongue. And owing to the weakness of such dialects in comparison with Arabic and English, educational planning should take into consideration:

- a- Lack of facilities should not be an excuse for exclusion of local dialects finally.
 - b- Initiatives of ethnic and tribal groups to develop their dialects and use them in local schools should be adopted.
5. Educational planning should consider the fact of language, culture and environmental diversity to be definite educational experiences and potentials through which education begins at school and such diversity should, therefore, not be undermined. [*inter alia*]
- a- Educational planning should be connected with the mother tongue of the pupil in the manner stated above.
 - b- The curriculum should be flexible enough to accommodate the regional, cultural and environmental diversity. Text books may be diversified through delegation of power to Education Agencies at the (regional) state or local government level in order to relate the history and culture of pupils to the curriculum in a creative manner. [*inter alia*]

This new language policy was theoretically applicable to the first few grades in elementary education. The absence of linguistic research and transcription regarding the vast majority of the Sudanese languages requires financial means, time and linguistic expertise, if this policy is to be implemented. Secondary school and university education has to a large extent been arabicized since 1965 and 1990 respectively (Abu-Bakr & Abu-Manga 1997: 7-8).

Both Al-Amin Abu-Manga ⁵ and Yousif El-Khalifa Abu-Bakr ⁶ were the authors of a proposal for the establishment of a ‘National Language Policy Board’, which formed the basis for the 1997 law on language planning (Abu-Bakr & Abu-Manga 1997:12). In October 1997 the law was passed by the National Assembly. Some of its objectives are quoted below (Qānūn lil-majlis al-qawmī lil-takhtīt al-lughawī li-sana 1997).

⁵ The Institute of African and Asian Studies, University of Khartoum.

⁶ Khartoum International Institute, Sudanese National Commission for Education, Science and Culture.

Article 4:

- (A) To propose a national language policy and planning.
- (B) To spread the Arabic language as the national language (language of wider communication in Sudan) and as a medium for economic growth and social development besides its role in the intellectual and political management of the nation.
- (C) To lay the foundation for and achieve national unity and to ensure the Sudanese identity by thorough planning of the relationship between the national language and the local languages as pillars of the Sudanese culture.
- (D) To protect the cultural and linguistic diversity through maintaining the Sudanese linguistic heritage by studying, writing and documenting the different languages and to benefit from them concerning issues of development, government, education, identity and culture.

The National Language Planning Board has the following authority:

Article 6:

- (A) To study the Sudanese languages concerning their number of speakers, distribution and use in different domains.
- (B) To study the position of the Arabic language in relation to the Sudanese languages, to promote research on its spreading and to solve the problems that arise in connection with Arabic as the common language for communication and education.
- (C) To cooperate with relevant authorities in order to determine the real needs in decisions on juridical language issues in Sudan.
- (D) To promote scientific research on the language situation in Sudan.
- (E) To arrange contacts between scientific linguistic research institutions and relevant authorities in order to achieve the objectives of the language planning policy in the country.

Due to the lack of funds and linguistic expertise the law has not been implemented (Al-Amin Abu-Manga, pers. comm. February 2003).

The new Constitution of the Republic of the Sudan, which has been in force since 1 July 1998, has the following statements on language:⁷

Part I The Guiding Principles of the State

Article 3 Language

Arabic is the official language in the Republic of Sudan. The State permits the development of local languages and other international languages.

Part II Freedoms, Rights and Responsibilities

Article 27 Minorities and Cultural Rights

Every sect or group of citizens have the right to keep their particular culture, language or religion and to voluntarily bring up their children within the framework of these traditions. It is prohibited to impose one's traditions on children by coercion.

In comparison with the Addis Ababa Peace Agreement, the Constitution of 1998 does neither mention the special status of the English language in Southern Sudan nor the “promotion of local languages”.

The policy, in practice, of favouring the Arabic language, which does not reflect the diversity of languages and cultures, has resulted in a growing linguistic awareness among non-Arabic speaking groups in Sudan. On July 20, 2002 the Sudanese government and the SPLM/SPLA agreed on a broad framework for further peace negotiations.⁸ The agreement, called the Machakos Protocol, includes the following statements:

Part A

(Agreed principles)

- 1.2 That the people of South Sudan have the right to control and govern affairs in their region and participate equitably in the National government.

⁷ <www.sudan.net/government/constitution/english.html>

⁸ <www.sudanembassy.org>

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- 1.3 That the people of South Sudan have the right to self-determination, *inter alia*, through a referendum to determine their future status.
- 1.4 That religion, customs, and traditions are a source of moral strength and inspiration for the Sudanese people.
- 1.5 That the people of the Sudan share a common heritage and aspirations and accordingly agree to work together to:
- 1.6 Establish a democratic system of governance taking account to the cultural, ethnic, racial, religious and linguistic diversity and gender equality of the people of the Sudan.

This has already resulted in a change of the language policy towards an increasing use of southern Sudanese languages in education. In 2002 the Upper Nile State re-introduced Dinka, Shilluk, Maban and Nuer for primary education (class 1-4). Other southern Sudanese states are at the present preparing for mother tongue education. The SPLA has introduced Dinka as medium of instruction in primary schools (class 1-8) and in literacy courses with material from the Dinka Literacy Project in Khartoum. At university level, Dinka was taught in 2000 by Lino Kiir Kuony at the Institute of African and Asian Studies at the University of Khartoum. The University of Juba has recently expressed its interest in establishing a centre for Sudanese languages in the future (Kuony 2004).

2

Dinka language studies and orthography problems

As early as the 1860's German-speaking and Italian scholars and missionaries published Dinka vocabularies, grammars and texts (Beltrame 1867, 1870, 1880, 1881, Brun-Rollet 1862, Mitterrutzner 1866, Müller 1877a, 1877b, Schuchardt 1912, Westermann 1912).

During the period of 1928-1950 missionaries worked on the four main Dinka dialect groups in order to create orthographies, translate the Bible and develop educational material. Rev. Dr. R. Trundinger was stationed in the Padaang area and wrote a Dinka grammar and a Dinka-English dictionary (Trundinger 1942-44). Rev. Edward Arnold was stationed in the Agaar area, but did not produce any linguistic material on Dinka. Rev. Venerable Archdeacon A. Shaw in the Bor area translated part of the Bible (Shaw 1936). Rev. Fr. Arthur Nebel in the Rek area wrote a grammar and compiled dictionaries (Nebel 1936, 1948, 1979).

In spite of all these efforts, the orthography, which was developed following the Rejaf Language Conference in 1928, was not comprehensive enough and had to be modified several times. One reason for that was the inability to clearly define the voice quality differences in vowels, characteristic for Nilotic languages. The British linguist A. N. Tucker recognized that “breathy” and “non-breathy” vowels and tones play an important role in Dinka. His findings were published in various articles on Dinka language structure, orthography and spelling rules (Tucker 1938, 1939/78, 1981, Tucker & Bryan 1966).

Successive Sudanese governments after independence have always strongly opted for writing the Sudanese languages in Arabic script, because having one orthographic tradition in the educational system of the country is considered to be an advantage both for educational and nation-building reasons. In the 1950's, when the full responsibility for education in southern Sudan was taken over by the

government in Khartoum, several attempts were made to create orthographies in Arabic script for southern Sudanese languages. The Arabic team for the South was formed for this purpose, headed by Khalil M. Asakir, a linguist from the Cairo University. The team worked in the provinces of Bahr el Ghazal and Equatoria and in 1960 produced five readers in Dinka, Zande, Bari, Moru and Latuka in Arabic script. In the third southern province, Upper Nile, the linguist Harvey Hoekstra of the American Mission had done similar experiments in the Shilluk, Acholi and Anuak languages. In the 1960's discussions between the Arabic team, now headed by Yousif El-Khalifa Abu-Bakr, and Hoekstra resulted in an agreement on a unified system for the writing of southern Sudanese languages in Arabic script. By then several text books as well as Christian literature had already been published in Hoekstra's system (Abu-Bakr 1978:207-209).

The politically sensitive and controversial debate on writing Sudanese languages in Latin or Arabic script has influenced the Dinka speech community's attempts to create a unified orthography (Majok 1984). The Dinka community is generally using the Latin script, partly due to linguistic reasons (difficulties in representing the complicated vowel system in Arabic script) and partly due to political reasons (fear of Arabic dominance).

Since the 1980's, Dinka mother tongue speakers with linguistic training have contributed to the study of the language. Job Malou conducted research on the Dinka vowel system (Malou 1988:79-80). His study concluded beyond doubt that vowel quality, tone, length and phonation type ('breathiness') are contrastive in Dinka. The 'breathy' vowels are pronounced with a lowering of the larynx, which leads to a dilation of the vocal tract. Malou also published an article on language use among the Dinka (Malou 1983). Others have contributed material on phonological and nominal formation (Ayom 1980) as well as on nominal morphology (Akol 1989). A Dinka-English dictionary was also compiled (Makok & Marial 1999).

The Dinka language has also attracted attention from scholars within Nubian studies. Robin Thelwall conducted a comparative study on the Eastern Sudanic languages Daju, Nubian and Dinka (Thelwall 1978). He found that the Nubian language, Nobiin, had strong links with Dinka and that it had been in close contact with Dinka, or an earlier stage of Nilotic.

More recently, Torben Andersen's descriptive and comparative works on Western Nilotic languages (incl. Dinka) have shed more light on the phonology, morphology and syntax of these languages (Andersen 1987, 1992/94, 1993, 2001).

SIL International has, apart from promoting literacy work among Dinka refugees in Sudan, conducted studies in Dinka morphology and spelling rules (Duerksen 1989, 1993a, 1993b, 1996).

Leoma G. Gilley, linguistic consultant at the University of Khartoum, has contributed to the development of the Dinka language by arranging seminars, work-shops and literacy work (Gilley 2001, 2004). In her article on the orthography problems she concludes that the orthographies developed during the first half of the twentieth century for Dinka and other Nilotic languages have proven inadequate for the needs of the mother-tongue speakers of these languages (Gilley 2002). While the languages were easy to write, they were very difficult to read. The fusional monosyllabic structure of the languages, the under-representation of vowel quality and tone (still not marked) and the inconsistency of form have contributed to the situation. Recently a more morphophonemic approach to spelling has been tried in conjunction with more adequate representation. According to Gilley, the spelling changes have met with significant success. They have laid the foundation for the use of Dinka in formal domains in the future.

In the beginning of 2004 the Dinka community in Sudan has formed a Jiëëng Council of Elders, to function as a kind of Dinka language academy, where linguistic matters like orthographies and lexical expansion can be discussed and decided upon. The Council has recently taken the decision to promote the Rek orthography, used since 1993 in literacy programs and materials, to become the standard orthography for the Dinka language (Lino Kiir Kuony, pers. comm. March 2004).

3

Dinka literacy programs

The Summer Institute of Linguistics (SIL) started literacy programs among displaced Dinka in Khartoum in 1991. After a Nilotic phonology workshop (headed by Gilley in 1993), a Dinka literacy team was founded. 48 literacy centres have been established around Khartoum. A lot of literacy materials, like primers, text books on maths, science, history and geography as well as grammars, a Dinka Rek dictionary and other Dinka language learning texts, have been produced.

The Dinka Literacy Project is also documenting the language by compiling Dinka stories, proverbs, poems and war songs in written form. It publishes a quarterly bulletin in the Dinka language and a yearly calendar. The literacy team has also carried out, and is still carrying out, a number of workshops for teachers, supervisors and writers.

The objectives of the literacy team are to:

- 1) establish an appropriate writing system,
- 2) produce basic learning material,
- 3) translate the Bible into Dinka,
- 4) arrange Community Days where text books etc. are displayed and the culture is practiced.

SIL International, the Catholic Church and other foreign agencies as well as Sudanese organizations support the literacy work. The more than 100 teachers are paid by the Dinka community. They are either employed full-time, part-time or as volunteers, depending on means available. The literacy classes reach more than 2 000 students, both children and adults, in the three cities of Khartoum, Omdurman and Khartoum North (Kuony 2004).

There are also Dinka literacy projects outside Sudan in countries where there are many Dinka refugees. The Dinka refugee community in Egypt founded The Dinka

Language Institute in 1995. The institute was set up in order to develop programs to preserve Dinka language and culture and publish Dinka literature (Muorwël 1993 and 1996). The institute has its roots in the Dinka Cultural Society, formed in 1990 in Khartoum. The Dinka refugees in Egypt have been resettled in Australia, Canada, Britain, the Netherlands and the United States through a UNHCR resettlement program. In 2000, the Dinka Language Institute of Australia (DLIA) was founded in Victoria, Australia. The DLIA is an association of Dinka literacy workers, linguists, language development workers and Dinka language IT-specialists, who work together for the maintenance, preservation and development of the Dinka language.⁹

There are several other literacy projects among Dinka refugees, for example in the U.S. and in Canada, as well as Dinka language web pages on the internet. Fonts and keyboard layouts for Dinka and other southern Sudanese languages are available for download and use free of charge.

⁹ <www.home.vicnet.net.au/~agamlong/dlia>

4

Corpus development

The exposure of Dinka language speakers to Arabic and the need for terminology for new social institutions, scientific and technological innovations, as well as for cultural changes have resulted in a vocabulary expansion in the Dinka language. According to Caney (1984:15), vocabulary expansion is universally achieved in two basic ways: either through native invention and adaptation or through borrowing. The Dinka language has, to some extent, developed its corpus through borrowing of Arabic and English vocabulary, especially, in the case of English, terms related to science and technology. Many new words and concepts in other semantic domains, however, have been invented through semantic shift, compounding and phrase grouping.

Smieja (2003:89) defines the term borrowing as a linguistic pattern, characterized by the speakers' inclusion of foreign words, i.e. loanwords, into their language. Some speech communities may be at different stages of development, know-how and life experience, which necessitate different concepts and words. Many technological inventions and the categories naming them are borrowed by other communities. This aspect of corpus development is applicable to the Dinka vocabulary expansion also.

According to Thornell (1995:159), loanwords form an integral part of the recipient language and they are characterized by diachronic and synchronic stability and linguistic adaptation. The adoption of loanwords is favoured by a number of socio-cultural and linguistic factors, which are interrelated. Intensity of contact and the typological distance between the languages involved are decisive for the degree of adoptability of items of the source language (SL) and the target language (TL). Social factors, like length of contact between SL and TL, size of speaker groups, degree of bilingualism and socio-political dominance, are more important than linguistic ones. In the case of Dinka and Arabic, all these social components of language contact are very relevant, even though the two languages are structurally and typologically different. Arabic was spread among the Dinka community by

administrators, soldiers and traders and, as a consequence, a large number of borrowed words of Arabic origin pertain to every day life. Concerning Dinka and English, only two of the above factors, i.e. length of contact between the languages and socio-political dominance by the English language, are to a certain extent applicable to the borrowing of English terminology. The other two factors (sizes of speaker groups and bilingualism) have probably not influenced the integration of English loanwords into Dinka in general, as there was never a large English speaking group in Sudan and as only the educated elite among the Dinka speak English. English plays the role of a language of international status that is the source language for borrowing terms on science and technology.

Most Arabic and all English loanwords in Dinka are content words, like nouns. Lexical borrowing is a characteristic sign of casual language contact, according to the borrowing scale of Thomason & Kaufman (1988:74-75). Structural borrowing of function words, like some conjunctions and adverbial particles of Arabic origin in Dinka, indicates a slightly more intense contact. Structural borrowing includes lexical borrowing of function words and influences phonological, syntactic, lexical semantic, morphological and typological features in various degrees depending on the intensity of language contact and cultural pressure. The migration of large numbers of Dinka speakers as refugees to predominantly Arabic-speaking areas in northern Sudan or to English-speaking countries and, consequently, their increasing exposure to Arabic or English will probably lead to more structural borrowings. A high level of bilingualism, which is a reflection of great cultural pressure exerted by a politically and numerically dominant group on a subordinate population living within its sphere of dominance, is the classic situation that promotes structural borrowing (Thomason & Kaufman 1988:67).

4.1 Arabic loanwords in Dinka¹⁰

The spread of Arabic in southern Sudan was not very successful either from islamization or by Arabic as medium of instruction (or a subject) in the schools.

¹⁰ This chapter is mainly based on Abu-Manga's study of Arabic loanwords in Nilotic languages (Abu-Manga 1993:133-145). The IPA symbols from Abu-Manga's article are maintained in section 4.1.2., when explaining the consonant changes, whereas the examples are given according to the orthography explained in appendix 1. Additional examples of Arabic loanwords, taken from Dinka literacy texts and Nebel's dictionary (1979:101-198), are also given here according to the orthography in appendix 1.

The Arabic loanwords found in Dinka are not taken from standard Arabic, but from colloquial Arabic since the contact has primarily been between speakers rather than from the written form of the language.

The central Sudanese colloquial dialect of Arabic has provided Dinka with loan words pertaining to household utensils, market, food stuffs and frequently used function words and interjections.

<i>thään</i>	< Ar. <i>ṣahan</i> ‘dish’
<i>tarabeth</i>	< Ar. <i>tarabeeza</i> ‘table’
<i>bermil</i>	< Ar. <i>barmiil</i> ‘barrel’
<i>dukaan</i>	< Ar. <i>dukaan</i> ‘shop’
<i>kalas</i>	< Ar. <i>khalaas</i> ‘enough’
<i>lakin</i>	< Ar. <i>laakin</i> ‘but’

The Turco-Egyptian variety of Arabic, which is no longer in general use, has contributed words pertaining to administration and administrative power.

<i>maabuuth</i>	< Ar. <i>mahbuus</i> ‘prisoner’
<i>temerji</i>	< Ar. <i>tamarji</i> ‘nurse’

In some cases Arabic words might have been borrowed indirectly through the non-*Nilotic* languages of Bahr al Ghazal, namely of the Moro-Madi or Bongo-Bagirmi groups. One example is the loan *paniina* < Ar. *fanilla* ‘undershirt’, encountered in Dinka (Bor). Replacement of the phone [l] by [n] in this example is unexpected, since nothing in the Dinka phonological system prevents the medial occurrence of [l] (Abu-Manga 1993:136). However, according to Gilley (email, 8 June 2004), the Padang dialect regularly substitutes [n] for [l].

4.1.1 Vowels

Dinka has a seven vowels / i, e, ε, a, ɔ, o, u /, while Sudanese Arabic has only five / i, e, a, o, u /. However, different phonological conditions and environments change the realization of the vowels in Arabic loanwords in Dinka.

There is a tendency for vowel harmony, especially in cases of compensatory vowel lengthening when consonants are deleted.

<i>cäǟt</i>	< Ar. <i>šaaḥid</i> ‘witness’
<i>maapath</i>	< Ar. <i>muḥaafiz</i> ‘governor’
<i>mapatic</i>	< Ar. <i>mufettish</i> ‘inspector’
<i>reeth</i>	< Ar. <i>raʔiis</i> ‘president’

Original long vowels are often shortened.

<i>lakin</i>	< Ar. <i>laakin</i> ‘but’
<i>cai</i>	< Ar. <i>šaayi</i> ‘tea’
<i>tup</i>	< Ar. <i>tuub</i> ‘brick’
<i>carit</i>	< Ar. <i>šariit</i> ‘cassette’

Due to the preferred CV, CVC, CVVC or CVV syllable structures in Dinka, vowel insertion, epenthesis, occurs quite frequently in order to dissolve consonant clusters.

<i>muthilimiin</i>	< Ar. <i>muslimiin</i> ‘Muslims’
<i>kumbur</i>	< Ar. <i>kubri</i> ‘bridge’
<i>ebera</i>	< Ar. <i>ʔibra</i> ‘needle’
<i>turumba</i>	< Ar. <i>trumba</i> ‘petrol station, pump’

Compensatory lengthening of vowels in cases of consonant deletion is common.

<i>mäǟdi</i>	< Ar. <i>mahdi</i> ‘mahdi’
<i>thäǟn</i>	< Ar. <i>ṣaḥan</i> ‘dish’
<i>maabuuth</i>	< Ar. <i>mahbuus</i> ‘prisoner’

4.1.2 Consonants

Arabic consonants, which do not exist in Dinka, are adapted phonologically in the following way:

- a) All the Arabic emphatic (pharyngealized) consonants ¹¹ [ṭ], [ḍ], [ṣ], [ẓ] and [ḷ] ¹² lose their pharyngeal feature in Dinka.

¹¹ In this paper, underlining is used to signify pharyngealization. Thus [ṣ] denotes here a pharyngealized or “emphatic” [s].

¹² In Arabic, pharyngealization of [l] is conditioned by a preceding [a] (Abu-Manga 1993:144).

Ar. [t] > [t]

kartum ‘Khartoum’ < Ar. *khartuum*
taiara ‘aeroplane’ < Ar. *tayyaara*

Ar. [d] > [d]

gaadit ‘judge’ < Ar. *gaadi*
fadda ‘silver’ < Ar. *fidḍa*

Ar. [s] > [s] > [θ], represented by <th> in the Dinka orthography ¹³

thään ‘dish’ < Ar. *ṣaḥan*
bathala ‘onion’ < Ar. *baṣal*

Ar. [z] > [z] > [ð] <dh> in non-final positions, and [θ] <th> in final positions

mandhara ‘looking’ glass’ < Ar. *manzara*
madhuluum ‘an appeal,
 court (being cheated)’ < Ar. *mazlūm*
maapath ‘governor’ < Ar. *muḥaafiz*

Ar. [l] > [l]

galam ‘pen’ < Ar. *galam*

- b) The Arabic pharyngeal fricative [ʕ], the glottal plosive [ʔ], as well as the fricatives [h] and [ħ] tend to disappear in all environments. In medial and final positions, the preceding vowel is lengthened to compensate for the lost consonant.

Ar. [ħ] > Ø

akiim ‘doctor’ < Ar. *ḥakiim*
akuma ‘government’ < Ar. *ḥakuuma*

Ar. [h] > Ø

määdi ‘mahdi’ < Ar. *mahdi*
buia ‘paint’ < Ar. *buhiya*

¹³ In Abu-Manga’s (1993:138) article, <th> is said to represent IPA [θ], while in the Dinka orthography <th> is said to represent IPA [t̪]; see also appendix 1.

Ar. [ʔ] > Ø

alip ‘thousand’

< Ar. *ʔalif*

reeth ‘president’

< Ar. *raʔiis*

Ar. [ʕ] > Ø

thaa ‘watch’

< Ar. *saaʕa*

arabia ‘car’

< Ar. *ʕarabiya*

- c) Arabic labiodental fricative [f] is replaced by a bilabial plosive [p] in all positions.¹⁴

alip ‘thousand’

< Ar. *ʔalif*

paniina ‘undershirt’

< Ar. *faniila*

mapath ‘axe’

< Ar. *faas*

- d) The Arabic voiceless alveolar fricative [s] mostly becomes a voiceless dental plosive [t̪] <th>.

maabuuth ‘prisoner’

< Ar. *maḥbuus*

thaa ‘watch’

< Ar. *saaʕa*

alathker ‘soldier’

< Ar. *alʕaskari*

- e) In non-final positions, the Arabic voiced alveolar fricative [z] becomes a voiced dental fricative [ð] <dh>. This is pronounced with the tip of the tongue touching the back of the teeth. In final positions, it becomes a voiceless dental plosive [t̪] <th>.

gidhaath ‘bottle’

< Ar. *gizaaza*

kooth ‘mug’

< Ar. *kooz*

- f) The Arabic voiced postalveolar affricate [dʒ], spelled <dz> or <j>, becomes a voiceless palatal plosive [c], or does not change.

circir ‘a kind of lettuce’

< Ar. *dzirdzīr*

dzene~jene ‘pound (currency)’

< Ar. *jineeh*

sidzin~sijin ‘prison’

< Ar. *sidzin*

¹⁴ Gilley (e-mail 10 Aug 2004) suggests that [f] and [p] are in free variation in Dinka, and other Nilotic languages.

- g) The Arabic voiceless postalveolar fricative [ʃ]¹⁵ becomes a voiceless palatal plosive [c].

<i>warca</i> ‘work-shop’	< Ar. <i>warša</i>
<i>girceen</i> ‘two-piastre coin’	< Ar. <i>giršeen</i>
<i>cuali</i> ‘bag, sack’	< Ar. <i>šuwaal</i>
<i>biric</i> ‘mat (of palm-leaves)’	< Ar. <i>biriš</i>

- h) The Arabic voiceless velar fricative [x], spelled <kh>, becomes a voiceless velar plosive [k].

<i>kalas</i> ‘enough’	< Ar. <i>khalās</i>
<i>bateka</i> ‘water-melon’	< Ar. <i>batikh</i>
<i>mikadda</i> ‘pillow’	< Ar. <i>mikhadda</i>
<i>mafak</i> ‘pump’	< Ar. <i>munfaakh</i>

- i) The Arabic voiced plosives [b], [d] and [g]¹⁶ become voiceless in final positions.

Ar. [b] > [p]	
<i>doolaap</i> ‘cupboard’	< Ar. <i>doolaab</i>
<i>mäktäp</i> ‘office’	< Ar. <i>maktab</i>

Ar. [d] > [t]	
<i>cäät</i> ‘witness’	< Ar. <i>šaahid</i>

Ar. [g] > [k]	
<i>suuk</i> ‘market’	< Ar. <i>sūg</i>
<i>sunduuk~sanduk~thanduk</i> ‘box’	< Ar. <i>sunduug</i>

4.1.3 Regressive assimilation

One important phonological feature in Dinka relates to regressive assimilation. Final plosives in singular nouns are replaced by nasals when the nouns are

¹⁵ In accordance with Abu-Manga (1993), <š> is used here to represent [ʃ].

¹⁶ In Sudanese Colloquial Arabic, the voiceless uvular plosive [q] is realized as a voiced plosive [g].

followed by adjectives, possessive and demonstrative pronouns, or by nouns in the genitive case.

-[t] > -[n]

wunda ‘our village’ < *wut* ‘village’ + *-da* ‘our’

-[t̪] <th> > -[n̪] <nh> ¹⁷

alan thith ‘red cotton’ < *alath* ‘cotton’ + *thith* ‘red’

The regressive assimilation, which often includes vowel quality or quantity changes, operates perfectly with the Arabic loanwords in Dinka.

-[t] > -[n]

can de Deng ‘Deng’s witness’ < *cäät* ‘witness’ + *de* (GEN) + *Deng* (proper name)

-[t̪] <th> > -[n̪] <nh> ¹⁸

kənh de piu ‘water mug’ < *kəth* ‘mug’ + *de* (GEN) + *piu* ‘water’

4.1.4 Nominal plural formation through vowel alternation

The system for nominal plural formation, based on changes in vowel quantity, vowel quality, voice quality and tones, also affects the Arabic loanwords. Vowel-quantity change (i.e. lengthening) is by far the most productive, representing 62% of the Arabic loanwords in Abu-Manga’s study (1993:141).

- a) Lengthening of the last vowel (of the singular form) and lowering of its (non-low) tone in multi-syllabic words. (Assignment of tone to loanwords seems to be governed by their original syllabic structure and stress, but more investigation in this area is needed.)

SINGULAR

gálám ‘pen/pencil’

jèné ‘pound (currency)’

wárágàk ‘paper, book’

PLURAL

gálàam

jènèe

wárágèek

¹⁷ See also appendix 1.

¹⁸ See also appendix 1.

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- b) Shortening of the medial vowel of monosyllabic words with long vowels. This category shows irregular patterns of tones.

<u>SINGULAR</u>	<u>PLURAL</u>
<i>súuk</i> ‘market’	<i>sûk</i>
<i>cäät</i> ‘witness’	<i>càt</i>
<i>reéth</i> ‘president’	<i>réth</i>

- c) Lengthening and diphthongization (to *-àì*) of the final vowel *-à*, the tone of the diphthong always remaining low. This category consists only of loanwords ending in *-a*.

<u>SINGULAR</u>	<u>PLURAL</u>
<i>máalàgà</i> ‘spoon’	<i>máalàgaàì</i>
<i>màláyà</i> ‘bedsheet’	<i>màláyaàì</i>
<i>kúurà</i> ‘ball’	<i>kúuraàì</i>

- d) Lowering of the tone of the last vowel, which is always long, in disyllabic words.

<u>SINGULAR</u>	<u>PLURAL</u>
<i>màbíur</i> ‘steamer’	<i>màbìur</i>
<i>dòoláap</i> ‘cupboard’	<i>dòolàap</i>
<i>thàabíun</i> ‘soap’	<i>thàabìun</i>

- e) Elision of the final consonant, change of quality and *i*-diphthongization of the vowel, the diphthong carrying a falling tone. This category is limited to monosyllabic loanwords with high tone, ending in *-c*.

<u>SINGULAR</u>	<u>PLURAL</u>
<i>déec</i> ‘army’	<i>dêi</i>
<i>gáac</i> ‘belt’	<i>gêi</i>

4.1.5 Semantic fields

Borrowed words from Sudanese colloquial Arabic belong mostly to the following semantic fields:

a) Administration

<i>madiir</i> ‘director’	< Ar. <i>mudiir</i>
<i>maamuur</i> ‘paramount chief’	< Ar. <i>maʔmuur</i>
<i>deec</i> ‘army’	< Ar. <i>jeiš</i>
<i>gediya</i> ‘court (case)’	< Ar. <i>gadiya</i>
<i>sijin</i> ‘prison’	< Ar. <i>sijin</i>

b) Education

<i>galam</i> ‘pen, pencil’	< Ar. <i>galam</i>
<i>waragak</i> ‘paper, book’	< Ar. <i>waraga</i>
<i>naajir</i> ‘headmaster’	< Ar. <i>naazir</i>

c) Market

<i>dukaan</i> ‘shop’	< Ar. <i>dukaan</i>
<i>taajir</i> ‘trader’	< Ar. <i>taajir</i>
<i>jelaap</i> ‘Northern (Sudanese) trader’	< Ar. <i>jelaaba</i>
<i>suuk</i> ‘market’	< Ar. <i>suug</i>
<i>jene</i> ‘pound’	< Ar. <i>jenee</i>
<i>girie</i> ‘half-piastre’	< Ar. <i>griiš</i>
<i>rial</i> ‘ten-piastre coin’	< Ar. <i>riaal</i>

d) Household

<i>maalaga</i> ‘spoon’	< Ar. <i>maʕalaga</i>
<i>jerdak</i> ‘bucket’	< Ar. <i>jerdel</i>
<i>kəcc</i> ‘mug’	< Ar. <i>kooz</i>
<i>thaabuun</i> ‘soap’	< Ar. <i>saabuun</i>
<i>malaya</i> ‘bedsheet’	< Ar. <i>malaaya</i>
<i>doolaap</i> ‘cupboard’	< Ar. <i>doolaab</i>
<i>thään</i> ‘dish’	< Ar. <i>saḥan</i>
<i>sunduuk</i> ‘box’	< Ar. <i>sunduug</i>

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<i>gidhaath</i> ‘bottle’	< Ar. <i>gizaaza</i>
<i>bermil</i> ‘barrel’	< Ar. <i>barmiil</i>
<i>tarabeth</i> ‘table’	< Ar. <i>tarabeeza</i>

e) Food

<i>leemuun</i> ‘lemon’	< Ar. <i>liimuun</i>
<i>cai</i> ‘tea’	< Ar. <i>šaayi</i>
<i>circir</i> ‘a kind of lettuce’	< Ar. <i>dzirdzir</i>
<i>weeka</i> ‘dried okra’	< Ar. <i>weeka</i>
<i>thokär~thukar</i> ‘sugar’	< Ar. <i>suker</i>
<i>alawa</i> ‘sweets, candy’	< Ar. <i>halaawa</i>
<i>bathala</i> ‘onion’	< Ar. <i>baṣal</i>
<i>burtukan</i> ‘orange’	< Ar. <i>burtukaan</i>

f) Clothing

<i>jelabiya</i> ‘robe’	< Ar. <i>jelabiya</i>
<i>mathelon</i> ‘trousers’	< Ar. <i>pantaloon</i>
<i>paniina</i> ‘undershirt’	< Ar. <i>fanila</i>
<i>gomith</i> ‘shirt’	< Ar. <i>gamiis</i>
<i>markuup</i> ‘locally made shoes’	< Ar. <i>markuub</i>

g) Technology

<i>makana</i> ‘engine’	< Ar. <i>makana</i>
<i>thaa</i> ‘watch’	< Ar. <i>saaṣa</i>
<i>gatar</i> ‘train’	< Ar. <i>gatar</i>
<i>musajil</i> ‘tape recorder’	< Ar. <i>musajil</i>
<i>carit</i> ‘cassette’	< Ar. <i>šariit</i>
<i>amaara</i> ‘pavilion’	< Ar. <i>ṣamaara</i>
<i>arabia</i> ‘car’	< Ar. <i>ṣarabiya</i>

Most of the borrowed words of Arabic origin are content words, in the form of nouns. There are, however, also quite many function words, which are frequently used in daily life.

<i>baden</i> ‘then, later’	< Ar. <i>baṣdeen</i>
<i>lisa</i> ‘not yet’	< Ar. <i>lissaf</i>

<i>lakin</i> ‘but’	< Ar. <i>laakin</i>
<i>yela</i> ‘and then’	< Ar. <i>yella</i>
<i>kep</i> ‘how (are you)’	< Ar. <i>keef</i>
<i>abadan</i> ‘at all’	< Ar. <i>ʔabadan</i>
<i>males</i> ‘sorry’	< Ar. <i>maʕleeš</i>
<i>hasa</i> ‘now’	< Ar. <i>hassaʕ</i>
<i>kalas</i> ‘enough’	< Ar. <i>khaʕlaas</i>

The numerous loanwords in the semantic fields of every day life and the above function words are a sign of the close daily interaction between speakers of Dinka and Arabic in Sudan and the societal nature of Arabic influence.

4.2 English loanwords in Dinka

Many terms for new concepts and technological and scientific innovations are borrowed from English. The data for this section on English loanwords are taken from Dinka literacy texts and Nebel’s dictionary, where several loan words of English (and Arabic) origin appear (Kuony & Duerksen 2000, Kuony 2000, 2003, Nebel 1979 and 2001).¹⁹

The words in the literary texts are marked for breathiness and long vowels, but not for tone. In Nebel’s dictionary some words are marked for tone and some for breathiness in a seemingly inconsistent way. It is therefore not possible within the scope of this paper to account for the patterns of tones in English loanwords in Dinka. One might assume, however, that tones play a role in plural formation of English loanwords. Compare, for example, the singular and plural forms of the Arabic and English loanwords below.

SINGULAR

gálám ‘pen, pencil’
thukul ‘school’

PLURAL

gálàam < Ar. (Abu-Manga 1993:141)
thukuul < English

Both words form plural by lengthening the vowel and, possibly, changing the tone.

¹⁹ See appendix 1 for the orthography used in the texts. Where the Dinka orthography uses <ŋ> and <y>, Nebel’s dictionary (1979) uses <ng> and <h>, respectively.

4.2.1 Vowels

Vowel changes, in comparison to the source language, sometimes occur in English loanwords. Vowel harmony appears like, for example, in:

<i>hothpitol</i>	< Eng. <i>hospital</i>
<i>nekitip</i>	< Eng. <i>negative</i>

In Dinka words, final plosives are devoiced, for example [g] > [k]. As Dinka is a language with a monosyllabic structure, loanwords with more than one syllable might be treated phonologically as a compound of monosyllabic words in Dinka. That could explain the devoicing of [g] in *nekitip* above, as well as in *eklesia* ‘church’ from Italian *eglesia*, and *takia* ‘cap’ from Arabic *ṭaagiya*.

The characteristic syllabic CV, CVC, CVVC and CVV structure of Dinka is reflected in the realization of loanwords and consonant clusters are avoided through epenthesis, i.e. insertion of an extra vowel. In the case of English loanwords epenthesis is frequently combined with vowel harmonization.

<i>athirelia</i>	< Eng. <i>Australia</i>
<i>ariktik</i>	< Eng. <i>Arctic</i>
<i>thukul</i>	< Eng. <i>school</i>
<i>thurumbil</i>	< Eng. <i>automobile</i>
<i>turuk</i>	< Eng. <i>Turk(ish)</i>
<i>gëlääth</i>	< Eng. <i>glass</i>

Due to the non-standardized orthography in the examples above, it is difficult to draw any substantial conclusions on possible patterns of vowel alternations in loanwords. The word for ‘apple’, for example, is spelled in three different ways in the text corpus: *eppol*, *epel* and *apel*.

Breathy vowels are present in some English loanwords, for example:

<i>bääth</i>	< Eng. <i>bus</i>
<i>gëlääth</i>	< Eng. <i>glass</i>
<i>gäth</i>	< Eng. <i>gas</i>
<i>päthipik</i>	< Eng. <i>Pacific</i>
<i>rapherï</i>	< Eng. <i>referee</i>

The texts also have inconsistencies in the marking of breathiness, which make conclusions on rules governing the assignment of breathiness uncertain. The word for radio, for example, was found with two spellings: *radio* and *rädio*.

4.2.2 Consonants

English loanwords containing consonant phonemes, which are not present in Dinka, are naturalized in the same ways as consonants in Arabic loanwords (as presented above).

- a) The English voiceless labiodental fricative [f] becomes a voiceless bilabial plosive [p] in all positions.²⁰

<i>aprika</i>	< Eng. <i>Africa</i>
<i>telgrap</i>	< Eng. <i>telegraph</i>
<i>telepuun</i>	< Eng. <i>telephone</i>

- b) The English voiceless alveolar fricative [s] is turned into a voiceless dental plosive [t̪] <th>.

<i>thinema</i>	< Eng. <i>cinema</i>
<i>thukul</i>	< Eng. <i>school</i>
<i>poliith</i>	< Eng. <i>police</i>

- c) The English voiced alveolar fricative [z] becomes a voiced dental fricative [ð] <dh>.

<i>[motor-]bendhün</i>	< Eng. <i>benzene</i> [benzi:n]
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- d) The English voiceless postalveolar fricative [ʃ] becomes a voiceless dental plosive [t̪]. (In Arabic loanwords, [ʃ] becomes [c].) I have only one example of a [ʃ] in final position :

<i>inglith</i>	< Eng. <i>English</i>
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²⁰ Gilley (e-mail 10 Aug 2004) suggests that [f] and [p] are in free variation in Dinka, and other Nilotic languages.

- e) The English voiced labiodental fricative [v] becomes a voiced bilabial plosive [b], which turns into the voiceless bilabial plosive [p] in final positions.

<i>laba</i>	< Eng. <i>lava</i>
<i>bulkan</i>	< Eng. <i>volcano</i>
<i>telbidhiön</i>	< Eng. <i>television</i>
<i>pothithip</i>	< Eng. <i>positive</i>

- f) Voiced plosives turn voiceless in final positions, following the general rule in Dinka.

<i>pet</i>	< Eng. <i>page</i>
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As the English voiceless alveolar fricative [s] turns into [t̪], English [s]+[t] consonant clusters become [t̪] <th>.

<i>kemüith</i>	< Eng. <i>chemist</i>
<i>inthitiööt</i>	< Eng. <i>institute</i>
<i>pithön</i>	< Eng. <i>piston</i>

Final consonants in English loanwords often disappear, as a way of cluster (or pronunciation) simplification.

<i>probin</i>	< Eng. <i>province</i>
---------------	------------------------

Here the final [s] did not become [t̪] <th>, as might be expected, but disappeared.

<i>parliamen</i> (or <i>palamen</i>)	< Eng. <i>parliament</i>
---------------------------------------	--------------------------

The latter version is probably borrowed via Sudanese Arabic, where it is pronounced without final -[t̪] and mid -[r]-, to avoid consonant clusters.

<i>dithrik</i>	< Eng. <i>district</i>
<i>dina</i>	< Eng. <i>dinner</i>

4.2.3 Regressive assimilation

The nasalization rule of singular nouns ending with plosives before adjectives, possessive, demonstrative and relative pronouns is also applied for English loanwords.

[t̥] <th> > [ɲ̥] <nh> ²¹

bänh ðit ‘big bus’ < *bath* ‘bus’ + *ðit* ‘big’ (N+ADJ)

4.2.4 Nominal plural formation through vowel alternation

Plurals of English loanwords are formed according to the most common rules of Dinka nominal plural formation.

- a) Lengthening of the final vowel in multi-syllabic words.

SINGULAR

thurumbil ‘automobile’

thukul ‘school’

PLURAL

thurumbiil

thukuul

- b) Vowel shortening in monosyllabic words.

SINGULAR

bääh ‘bus’

PLURAL

bäth

In the text corpus, there are no examples of plural formation of English loanwords involving diphthongization. As the words in the investigated texts are not marked for tone, it is not possible to account for other possible plural formations, which involve tone changes only, for example, in disyllabic words.

²¹ See appendix 1 for the corresponding IPA symbols.

4.2.5 Semantic fields

English loanwords are mostly found within technology, science, administration and education.

a) Technology

<i>bäth</i>	< Eng. <i>bus</i>
<i>thurumbil</i>	< Eng. <i>automobile</i>
<i>rädio</i>	< Eng. <i>radio</i>
<i>telepuun</i>	< Eng. <i>telephone</i>

b) Science

<i>gäth</i>	< Eng. <i>gas</i>
<i>laba</i>	< Eng. <i>lava</i>
<i>kemüith</i>	< Eng. <i>chemist</i>
<i>kompäth</i>	< Eng. <i>compass</i>
<i>kilo</i>	< Eng. <i>kilo</i>

c) Administration

<i>probin</i>	< Eng. <i>province</i>
<i>polüith</i>	< Eng. <i>police</i>
<i>gobornor</i>	< Eng. <i>governor</i>
<i>dithrik</i>	< Eng. <i>district</i>

d) Education

<i>thukul</i>	< Eng. <i>school</i>
<i>penthil</i>	< Eng. <i>pencil</i>
<i>inthitiööt</i>	< Eng. <i>institute</i>
<i>pet</i>	< Eng. <i>page</i>

The semantic fields, in which English loanwords are common, are characteristic for the relationship between Dinka and English. In Sudan the role of the English language was restricted to the colonial administration and in the schools as a medium of instruction, while nowadays it generally functions as a language of international status for science and technology.

4.3 Expansion of Dinka vocabulary through adaptation

The examples below are taken from a corpus of administrative and linguistic terms, compiled by Lino Kiir Kuony,²² and from the English-Dinka section in Nebel's dictionary (1979: 101-199). Different methods of semantic shift seem to be very productive ways to form new words and concepts in Dinka. Phrase grouping and compounding are also frequently used, almost always involving words subjected to semantic shift.

4.3.1 Semantic shift

Semantic shift often means that the original meaning has become obsolete or out of use. In all the examples below, however, the original meaning is used in addition to the new one.

- a) Extension applies to words possessing a specific meaning, in Dinka often referring to traditional pastoralist life and activities, which have expanded their meaning to include new concepts.

<u>PRIMARY MEANING</u>	<u>NEW MEANING</u>
<i>bäny</i> '(tribal) chief'	'director, minister'
<i>wut</i> 'cattle camp'	'state/nation'
<i>määc</i> (<i>weng</i>) 'keeping (of cattle)'	'administration'
<i>riai</i> 'canoe'	'vessel', as in <i>rian thilik</i> 'railway', lit. 'vessel (of) steel'
<i>amar</i> 'flock (of animals)'	'fleet', as in <i>amar riai</i> 'flock (of) canoes/vessels'
<i>weu</i> 'goods', plural of 'iron' 'money'	
<i>luok</i> 'big hut (for keeping cattle)'	'building', as in <i>luang nhialic</i> 'church', lit. 'God's building'

- b) Narrowing is a method of semantic shift, where words with a general meaning have adopted a specialized aspect.

²² Lino Kiir Kuony is a Dinka literacy coordinator in Khartoum. He was a guest lecturer at the Department of Oriental and African Languages, Göteborg University, during October 2003.

<u>PRIMARY MEANING</u>	<u>NEW MEANING</u>
<i>kony</i> 'help'	> 'assistant'
<i>mac</i> 'ruler'	> 'officer'
<i>kuaany</i> 'picking up, collecting'	> 'recruitment'
<i>rin</i> 'name'	> 'noun'
<i>alui</i> 'work/activity'	> 'verb'
<i>anuët</i> 'link'	> 'conjunction'
<i>läth</i> 'filter'	> 'analysis'

- c) Metaphor is a method of semantic change through which a word may adopt another meaning as a result of metaphoric similarities in quality or function.

<u>PRIMARY MEANING</u>	<u>NEW MEANING</u>
<i>athok</i> 'mouth'	> 'representative'
<i>acieeth</i> '(somebody who) circulates'	> 'supervisor'
<i>dheth</i> 'moving (things) to and fro'	> 'communication'
<i>gäi</i> 'surprise'	> 'interjection'
<i>akol</i> 'sun'	> 'day'
<i>pèèi</i> 'moon'	> 'month'

4.3.2 Phrase groups

Phrase grouping, which includes a circumlocution or paraphrases to express the precise meaning of the new word or concept, is very productive in Dinka.

- bäny dit* 'president, king' < lit. 'big chief' (N+ADJ)
muk akok 'cashier' < lit. 'holder (of) basket with valuable things' (N+N)
raan athöör 'librarian' < lit. 'person (of) books' (N+N)
bäny ë thöoc 'chairman' < lit. 'chief of chair' (N+GEN+N)
koc lui 'staff' < lit. 'people (of) work' (N+N)
agör wëlic 'investigation' < lit. 'search inside words/matters' (N+N+INES)
atiet rin 'pronoun' < lit. 'instead of noun'
nhialic 'God' < lit. 'in the sky/above' (N+INES)
rian nhial 'aeroplane' < lit. 'vessel/canoe (of) sky/above' (N+N)

Phrase groups of Dinka words together with Arabic loanwords are also quite common.

- pan akïim* ‘hospital’ < ‘house (of) doctor’ (Dinka N + Arabic N)
pan abun ‘school’ < ‘house (of) father’ (Dinka N + Arabic N)
akim lec ‘dentist’ < ‘doctor (of) teeth’ > (Arabic N + Dinka N)
raan janina ‘gardener’ < ‘person (of) garden’ > (Dinka N + Arabic N)

4.3.3 Compounding

Compounding involves the union of two or more existing roots (free morphemes) to form lexical combinations with new meanings.

- akuenwëu* ‘accountant’ < ‘counting money’ < *akuët* ‘counting’ (nasalized) +
wëu ‘money’
nyinwut ‘ambassador’ < ‘eye (of) state/nation’ < *nyin* ‘eye’ + *wut*
‘state/nation’
anyuthrin ‘adjective’ < ‘show noun’ < *anyuth* ‘show’ + *rin* ‘noun’
anyuthwet ‘adverb’ < ‘show word’ < *anyuth* ‘show’ + *wet* ‘word’

Due to the monosyllabic structure of the Dinka language, compounding seems to be the least common way of creating new terminology and concepts. The examples of compounds above were also found to be written apart, as phrase groups, in the corpus.

5 Conclusions

All the examples in this paper, including appendix 2, of corpus development and vocabulary expansion show that the Dinka language is fully capable of meeting the requirements of the modern world. Terminology expansion through semantic shift, phrase grouping and compounding is very productive in the Dinka language. The numerous loanwords in the semantic fields of every day life, like food, household utensils and clothes, point to the close interaction between speakers of Dinka and Arabic. English plays the role of the language of international status and provides loanwords mainly for technical innovations and science. The various spellings of the loanwords and the borrowing from different source languages for the same concept (like *arabia* of Arabic origin and *turumbil* of English origin for 'car') point out the spontaneous nature of vocabulary expansion in the Dinka language. Standardization will be necessary in order to gain a role in formal domains, for example, in the educational system.

The Dinka speech community seems to be prepared for further development of their language, now having agreed upon a standard orthography and gaining experience and training in literacy work. If all the efforts of Dinka people, in Sudan and around the world, could be co-ordinated, there would be a very good foundation for future use of the Dinka language in society with particular reference to education, culture, research and development.

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APPENDIX 1

Dinka vowels and consonants

NON-BREATHY VOWELS

<u>Dinka</u>	<u>IPA</u>
a	a
e	e
i	i
ɔ	ɔ
o	o
ɛ	ɛ

BREATHY VOWELS

<u>Dinka</u>	<u>IPA</u>
ä	ɶ
ë	ɷ
ï	ɸ
ö	ɹ
u	ʊ
ë	ɛ̃
ö	ɔ̃

Source: Kuony & Duerksen (2000:5).

CONSONANTS

<u>Dinka</u>	<u>IPA</u>	<u>Description</u>
b	b	Like English 'b'
c	c	Like English 'ch' as in the words: chair, chin, arch; but with the blade of the tongue touching the top of the mouth
d	d	Like English 'd'
dh	ð	Like the English sound 'th' as in the words: then, father, lathe; but with the tip of the tongue touching the back of the front teeth

g	g	Like English 'g'
ɣ	ɦ	Some speakers pronounce this sound as a slight 'h' sound, while with other speakers there is no pronunciation at all
j	ʝ	Like English 'j', 'g' and 'dg' as in the words: joy, agile, badge
k	k	Like English 'k'
l	l	Like English 'l'
m	m	Like English 'm'
n	n	Like English 'n'
nh	ɲ	Like the th/dh sounds but with nasalization
ny	ɳ	Like the c/j but with nasalization
ŋ	ŋ	Like English 'ng' and 'n' as in the words: ring, anger, drink
p	p	Like English 'p'
r	r, r	Usually a flapped 'r' but rolled when word final
t	t	Like English 't'
th	ʈ	Like English 'th' as in the words: thin, nothing, truth; with tip of the tongue touching the back of the front teeth
w	w	Like English 'w', [written as 'u' syllable final]
y	j	Like English 'y', [written as 'i' syllable final]

Source: Kuony & Duerksen (2000:4).

APPENDIX 2

Lists of expanded Dinka terminology, including loan words

The English-Dinka wordlists compiled here have been grouped into the following semantic fields:

- 1 Administration
- 2 Clothing
- 3 Education
- 4 Food
- 5 Household
- 6 Market
- 7 Religion/Christianity
- 8 Science
- 9 Sports and entertainment
- 10 Technology

The sources from which the words have been collected include the following:

AM Abu-Manga, Al-Amin. 1993. Arabic loanwords in the Nilotic languages of the southern Sudan. In: *Proceedings of the fourth Nilo-Saharan conference, Bayreuth, Aug. 30-Sep. 2, 1989*, pp 133-145. Edited by Lionel M. Bender. Hamburg: Helmut Buske Verlag.

DLIA The Dinka Language Institute of Australia. Webpage at:
www.home.vicnet.net.au/~agamlong/dlia/

DLT Dinka literacy texts, which include the following:

Kuony, Lino Kiir. 2003. *Dinka grammar book one* [Acök Jam ë Thuonjäng Tök]. Khartoum: Sudan Workshop Programme, Dinka Community.

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LKK Kuony, Lino Kiir. 2003. Administrative terms in Dinka. Unpublished paper, compiled at the Department of Oriental and African languages, Göteborg University, October 2003.

ND Nebel, Arthur. 1979. *Dinka-English/English-Dinka dictionary*. (Museum combonianum: collana di studi africani dei missionari comboniani, 36.) Bologna: Editrice Missionaria Italiana (EMI).

Also, John Atök, a Dinka speaker resident in Norway, was very helpful in explaining the original meaning of some Dinka words that have been subject to semantic shift. He was interviewed in Drammen, Norway, on May 30-31, 2004.

Short note on orthography

Words deriving from the DLIA and DLT sources are written in the orthography given in appendix 1 above. Words from Nebel's dictionary (ND) are given in their original spelling, minus tone markings. Words from Abu-Manga's article (AM) maintain their original spelling, except that [t̪] and [ð] are here rendered as <th> and <dh>, respectively.

Abbreviations used

Source languages for loan words are noted with the following abbreviations:

Ar.	Arabic, i.e. Sudanese Colloquial Arabic
Eng.	English
It.	Italian

1. Administration

accountant [LKK]

akuenwëu or *akuen wëu* ‘counting money’ • compound or phrase group

administer (verb) [ND]

guir ‘arrange’ • semantic shift

administration [LKK]

maac ‘keeping’ • semantic shift; cfr *mac weng* ‘keep cattle’

ambassador [LKK]

nyinwut ‘eye (of) state’ • compound of *nyin* ‘eye’ and *wut* ‘state’

ambassador [ND]

raan reer nyin banydeic pandet ‘person staying (as) eye of leaders (of) the country’ • phrase group

appeal (court) [AM]

madhuluum ‘being cheated’ < Ar. *mazluum*

army [AM, DLT]

deec, jec < Ar. *jeish*

assembly [ND]

koc ci guer ‘people who administer’ • phrase group

assistant [LKK]

akony ‘helper’ • semantic shift

attaché [LKK]

atace < Eng. *attaché*

authority [ND]

bany ‘chieftainship’ • semantic shift

kocdit ‘elders’ • semantic shift

bursar, cashier [LKK]

muk akok ‘holder of basket with valuable things’ • phrase group

cell [ND]

qonhiin ‘small room’ • compound of *got* ‘room, hut’ and *hiin* ‘small’

census [ND]

akuen koc cieng baai ‘counting people living in a country/place’ • phrase group

census [ND]

akuen jang eben ‘counting every people/person’ • phrase group

chairman [LKK]

bëny ë thöoc ‘chief of chair’ • phrase group

civilian [ND]

raan cie alathker ‘person not being soldier’ • phrase group of Dinka words and Ar. *ʕaskari* ‘soldier’

clerk [LKK]

agön mäktäp ‘writer of (the) office’ • phrase group of Dinka word and Ar. *maktab*

clerk [ND]

katib < Ar. *kaatib* • final -[b] not devoiced

communication [LKK]

dheth ‘moving (things) to and fro’ • semantic shift

community [LKK]

baai ‘land, home’ • semantic shift

consul [LKK]

atuny baai ‘envoy (sent) (of) the country’ • phrase group of *atuc* (nasalized) ‘sent’ and *baai* ‘country’

council [DLT]

kənthil < Eng. *council*

council [ND]

rom bany ‘meeting (of) elders/leaders’ • semantic shift

country [ND]

baai, pan ‘home, land’ • semantic shift: *pan muonyjang* ‘Dinka land’

court (legal) [LKK]

luök • Dinka term

court case [AM]

gediya < Ar. *gadiya*

decree [ND]

wet akuma ‘word (of) government’ • phrase group

democracy [ND]

mac baai e wet jang ‘ruling the country by people’s word’ • phrase group

director [LKK]

bëny ‘chief’ • semantic shift

director [AM]

madiir < Ar. *mudiir*

district [DLT]

dithrik < Eng. *district*

domestic [ND]

kene baai ‘(referring) to home/country’ • phrase group

economist [LKK]

akuët ‘somebody spending and accumulating (money) systematically’ • semantic shift

embassy [LKK]

anyucwut ‘seat (of) the state’ • compound of *anyuc* ‘seat’ and *wut* ‘state’

embassy [DLT]

yembathi < Eng. *embassy*

finance [LKK]

wëu ‘iron, means, goods, money’ • semantic shift

fleet [ND]

amar riai ‘flock (of) vessels’ • semantic shift

foreigner [ND]

alei ‘stranger’ • Dinka word

folk [ND]

jang • Dinka word

govern (verb) [ND]

baai mac ‘rule country’ • phrase group of *baai* ‘country’ and *mac* ‘rule’

government [ND]

koc dit maac baai ‘elders ruling country’ • phrase group

government [ND]

akuma < Ar. *ḥakuuma*

governor [ND, DLT]

mudir, mudir < Ar. *mudiir*

governor [AM]

maapath < Ar. *muḥaafiz*

governor [DLT]

gobernor < Eng. *governor*

grade (military) [LKK]

abër ‘tall’ • semantic shift

inspector [AM]

mapatic < Ar. *mufettish*

judge [AM]

gaadit < Ar. *gaadi*

king [ND]

benydit ‘big chief’ • compound of *beny* ‘chief’ and *dit* ‘big’

kingdom [ND]

bany ‘chieftainship’ • semantic shift

pan mac beny ‘country ruled (by) chief/king’ • phrase group

law [LKK]

löŋ ‘rule’ • semantic shift

legal [LKK]

ë löŋ • phrase group: *ë* (GEN) + *löŋ* ‘rule’

local [LKK]

baai ‘home’ country’ • semantic shift

minister [DLT]

minither < Eng. *minister*

minister of state [LKK]

bëny ë wut ‘chief of state’ • phrase group (originally *wut* meant ‘cattle camp’)

office [DLT]

mäktäp < Ar. *maktab*

office [ND]

qon got ‘room (of) writing’ • phrase group

office supervisor [LKK]

alänh mäktäp ‘somebody who is circulating (in) the office’ • phrase group of Dinka *alänh* and Ar. *maktab*

officer [LKK]

mac ‘ruler’ • semantic shift

officer [ND]

raandit alathker ‘big military person’ • phrase group of Dinka *raandit* and Ar. *ṣaskari* ‘soldier’

paramount chief [AM]

maamuur < Ar. *maʾmuur*

parliament [LKK]

akut athok ‘group (of) representatives’ • phrase group

parliament [DLT]

parliament, palamen < Eng. *parliament*

planning [LKK]

guëk ‘thinking of a problem before doing something about it’ • semantic shift

police [DLT]

poliith < Eng. *police*

police [ND]

polic < Eng. *police*

police [AM]

booliis < Ar. *booliis* < Eng. *police*

post [ND]

posta < Ar. *boosta*

president [LKK]

bäny dit ‘big chief’ • phrase group

president [AM]

reeth < Ar. *raʾiis*

prime minister [LKK]

bëny bäny ‘chief (of) the chiefs’ • phrase group: cfr the Ar. *raʾiis al-ruʾasaa* ‘prime minister’ (lit. ‘president of the presidents’)

prison [AM, ND]

sidzin, sijn < Ar. *sijn*

prisoner [AM]

maabuuth < Ar. *maḥbuus*

province [DLT]

probin < Eng. *province*

public [ND]

kene jang eben ‘to all people’ • phrase group

queen [ND]

beny tik ‘chief woman’ • phrase group

recruitment [LKK]

kuaany ‘collecting’ • semantic shift

representative [LKK]

athok ‘mouth’ • semantic shift: ‘mouth (of others)’

republic of Sudan [LKK]

pan ë thudän mac baai ‘country of Sudan ruled by the community’ • phrase group

secretary [LKK]

agööt ‘writer’ • semantic shift: cfr *agön ðit* ‘principal secretary’ (nazalisation of [t] > [n], and shortening of vowel)

society [LKK]

baai ‘land, home’ • semantic shift

soldier [ND, DLT]

alathker < Ar. *al-ḡaskari*

apuruk < from Turkish?

staff [LKK]

koc luwi ‘people (of) work’ • phrase group

state [LKK]

wut ‘cattle camp’ • semantic shift

subsidy [ND]

kuony akuma • phrase group of Dinka *kuony* ‘help’ and Ar. *ḥakuuma* ‘government’

sultan [DLT]

thultän < Ar. *sulṭaan*

witness [AM]

cäät < Ar. *shaahid*

2. Clothing

cap [ND]

tarbush < Ar. *ṭarbuush* • [sh] maintained

cap [ND]

takia < Ar. *taagiya*

gown [AM]

jelabiya < Ar. *jelabiya*

shirt [AM, ND]

gomith, gamish < Ar. *gamiis*

shoe [ND]

jesma < Ar. *jesma*

shoe (local) [AM, ND]

markup, markub < Ar. *markuub*

silk [ND]

kharir < Ar. *hariir*

sleeve [ND]

ciin alath ‘arm cloth’ • phrase group

trousers [ND]

bantalun < Ar. *bantaluun*

trousers [DLT]

mathelon < Ar. *bantaluun*

undershirt [AM]

paniina < Ar. *faniila*

3. Education

adjective [DLT, LKK]

anyuthrin ‘show noun’ • compound

adverb [DLT, LKK]

anyyhwët ‘show word’ • compound

blackboard [ND]

agencol • compound of *ageen* ‘board’ and *col* ‘black’

book [ND]

kitab < Ar. *kitaab* • final [-b] is not devoiced

book [ND]

athor ‘message’ • semantic shift

class (room) [ND]

got ‘room, hut’ • semantic shift

conjunction [DLT, LKK]

anuët ‘link’ • semantic shift

dictionary [DLIA]

dikconari < Eng. *dictionary*

grammar [DLIA]

gërämmar < Eng. *grammar*

headmaster [AM]

naajir < Ar. *naazir*

institute [DLT]

inthithiööt < Eng. *institute*

interjection [DLT, LKK]

gäi ‘surprise’ • semantic shift

letter [ND]

athor ‘message’ • semantic shift

librarian [LKK]

raan athöör ‘person (of) books’ • phrase group

noun [LKK]

rin ‘name’ • semantic shift

paper [AM]

waragak < Ar. *waraga*

paper [ND]

waraga < Ar. *waraga*

pen, pencil [AM]

galam < Ar. *galam*

pen, pencil [ND]

winh gotgot ‘needle/nail/pin (of) writing’ • phrase group

pencil [DLT]

penthil < Eng. *pencil*

preposition [DLT, LKK]

awët ‘in front of word’ • compound

pronoun [LKK]

atiet rin ‘instead of noun/name’ • phrase group

pupil [ND]

manh pioc ‘child (of) learning/ education’ • phrase group

read (verb) [ND]

kuen athor ‘count letters’ • phrase group

school [DLT]

pan abun ‘house (of) father’ • phrase group of Dinka word *pan* ‘house’ and Arabic loanword *abu* ‘father’

school [DLT]

thukul < Eng. *school*

verb [LKK]

alui ‘work, activity’ • semantic shift

4. Food

apple [DLT]

apel, epel, eppol < Eng. *apple*

dried okra [AM]

weeka < Ar. *weeka*

lemon/lime [AM]

leemuun < Ar. *limuun* < Eng. *lemon* • from English via Arabic

lemon/lime [ND]

lemun, alamun, limun < Ar. *limuun* < Eng. *lemon*

local (sweet) beer [ND]

asalyia < Ar. *ʕasaliya*

lettuce [AM]

circir < Ar. *dzirdzir*

okra [ND]

bamia < Ar. *bamya*

okra, ladies’ fingers [ND]

guoma, guom • Dinka words

onion [ND]

bathala < Ar. *baṣal*

orange [ND]

bertukan < Ar. *burtukaan*

orange [DLT]

orany < Eng. *orange*

(a kind of liquid) porridge [ND]

madida < Ar. *madiida*

salt [ND, DLT]

awan turuk • phrase group of *awai* ‘salt’ and *turuk* ‘Turkish’

awan kartum • phrase group of *awai* ‘salt’ and *kartum* ‘Khartoum’

salt [ND]

mela, melh < Ar. *melh*

sugar [ND, DLT, DLT]

sukkar, thukar, thokär < Ar. *sukkar*

sugar [ND]

kiec kartum • phrase group of *kiec* ‘honey’ and *kartum* ‘Khartoum’

sweets [ND, DLT]

halawa, alawa < Ar. *halaawa*

tea [AM, ND, DLT]

cai, cäi < Ar. *shaayi*

water-melon [ND]

bateka < Ar. *batikh*

5. Household

axe [AM]

mapath < Ar. *faas*

bag (sack) [ND]

cuali < Ar. *shuwaal*

barrel [AM]

bermil < Ar. *barmiil*

bed (of ropes) [ND]

angareb < Ar. *ʕangareib* < originally from Nubian

bed [ND]

farash < Ar. *faraash*

bedsheet [AM]

malaya < Ar. *milaaya*

blanket [ND]

batania < Ar. *bataniya*

blanket [ND]

alanh kumkum ‘cloth (for) covering’ • phrase group of *alath* ‘cloth’ (nasalized) and *kum* ‘cover’ (reduplicated in phrases)

bottle [AM]

gidhaath < Ar. *gizaaza*

box [ND]

akup • Dinka word

box [ND]

elba < Ar. *ʕelba*

box [AM, ND, DLT]

sunduuk, sanduk, thanduk < Ar. *ṣunduūq*

breakfast [ND]

futur < Ar. *fuṭuur*

breakfast [ND]

mieth nikaknhiak ‘food (of) morning’ • phrase group of *mieht* ‘food’ and *nhiak* ‘morning’ (reduplication)

bucket [AM, ND]

jerdak, jerdel < Ar. *jerdel*

candle [ND]

shama < Ar. *shamaʕa*

cotton [ND]

alath ‘cotton cloth, cotton plant’ • Dinka word

cupboard [AM]

doolaap < Ar. *doolaab*

cushion (wood) [ND]

thoc • original Dinka word

cushion (cotton) [ND]

mikadda < Ar. *makhadda*

dinner [DLT]

dina < Eng. *dinner*

dish [AM]

thään < Ar. *ṣaḥan*

fork [AM]

shok < Ar. *shook*

garden [ND]

janina < Ar. *janiina*

gardener [ND]

raan janina 'person (of) garden' • phrase group

grinding mill [ND]

tɔla < Ar. *tahuuna*

key [ND]

mufta < Ar. *muftaah*

ladder [ND]

sellim < Ar. *sillim*

latrine [ND]

musturah < Ar. *musturaah*

mat (of palm-leaves) [ND]

biric < Ar. *birish*

mirror [ND]

madara < Ar. *mazhara*

mug [AM]

kɔɔth < Ar. *kooz*

needle [ND]

ebera < Ar. *?ibra*

padlock [ND]

gɪfl < Ar. *gɪfl*

picture [ND, DLT]

sura, thura < Ar. *suura*

pillow (of cloth) [ND]

mihadda < Ar. *makhadda*

scissors [ND]

magas < Ar. *magaass*

servant [ND]

khadan < Ar. *khaddaam*

shovel [ND]

koreka < Ar. *koreek*

soap [AM, ND, DLT]

thaabuun, sabun, thabun < Ar. *saabuun*

sponge [ND]

lifa < Ar. *liifa*

spoon [AM]

maalaga < Ar. *maṣalaga*

table [AM, ND]

tarabeth, tarabeza < Ar. *tarabeeza*

tin [ND]

safia < Ar. *ṣaafiya*

6. Market

business [ND]

luoi ‘work’ • semantic shift

coin [ND]

gric < Ar. *griish*

market [ND, LKK]

qoc, ḡoc ‘buying (and selling)’ • semantic shift

market [ND, AM, DLT]

cuk, suuk, thuk < Ar. *suug*

merchant/trader (northern Sudanese) [ND, AM]

jalaba, jellaap < Ar. *jelaab*

merchant [ND]

kawaja < Ar. *khawaaja*

money [ND]

weu ‘goods, means’ • semantic shift; singular of *weu* is *weeth* meaning ‘iron’

money [ND]

girie < Ar. *griish*

piaster [AM]

girie < Ar. *griish*

piaster [ND]

weeth (sing), *weu* (plural) • semantic shift: original meaning: ‘goods, means, iron’

pound [AM]

dzene, jene < Ar. *jineeh*

shop [AM, ND, DLT]

dukaan, dukan, dukän < Ar. *dukaan*

store [ND]

dukandit • compound of Ar. *dukaan* ‘shop’ and Dinka *dit* ‘big’

ten-piastre coin [AM]

rial < Ar. *riaal*

thousand [AM]

alip < Ar. *ʔalif*

trader [AM]

tajir < Ar. *taadjir*

two-piastre [AM]

girceen < Ar. *girsheen*

7. Religion/Christianity

Bible [ND]

baibl < Eng. *Bible*

Bible [ND]

athor wel nhialic ‘Book (of) word (of) God’ • phrase group

Bible [DLT]

athör nhialic ‘Book (of) God’ • phrase group

bishop [ND]

bicop < Eng. *bishop*

(arch)bishop [ND]

mutran < Ar. *mutraan*

celibacy [ND]

cien acin tik ‘living without woman’ • phrase group

chaplet [ND]

rosario < It. *rosario*

Christmas [ND]

yan dhieth banyda ‘celebration of the birth (of) our Lord’ • phrase group

church [ND]

eklesia < It. *eglesia*

church [ND]

arom kristian ‘meeting place (of) Christians’ • phrase group of Dinka and English words

church [DLT]

pan abun ‘house (of) father’ (also ‘school’) • phrase group of *pan* ‘house, home’ and *abun* ‘father’

church [ND]

luang nhialic ‘building (of) God’ • phrase group of *luok* (nasalized) ‘big hut for the cattle’ and *nhialic* ‘God’

convert [ND]

raan ci jal a kristian ‘person who has become a Christian’ • phrase group

devil [ND]

jongrac ‘evil spirit’ • semantic shift and compound of *jok* ‘spirit’ and *kerac* ‘evil’

God [ND]

nhialic ‘in the high/above/sky’ • compound of *nhial* ‘high, above, sky’ and *-ic* ‘inside’

heaven (sky) [ND]

nhial ‘sky’ • semantic shift

pan nhialic ‘home of God’ • semantic shift

hell [ND]

bior ‘burning (fire)’ • semantic shift

pan jakrec ‘home (of) evil spirits’ • semantic shift

islam [DLT]

ithlam < Ar. *islaam*

muslims [DLT]

muthilimiin < Ar. *muslimiin*

pagan [ND]

raan cie kristian ‘person not being Christian’ • phrase group

Pope [ND]

papa < It. *Papa*

priest [ND]

raan nhialic ‘person/man of God’ • phrase group

wada ‘our father’ • semantic shift

rabbi [ND]

raan pioc wet nhialic ebreo ‘person teaching the words of the Hebrew God’ • phrase group

religion [ND]

atheek ‘reverence’ • semantic shift

sabbath [ND]

akol nhialic judeo ‘day of Jewish God’ • phrase group

sacred [ND]

kene nhialic ‘(referring) to God’ • phrase group

saint [ND]

santo < It. *santo*

Sunday [LKK]

aköl nhialic ‘day (of) God’ • phrase group

temple [ND]

luang nhialic ‘building (of) God’ • phrase group of *luok* ‘big hut (for cattle)’ and *nhialic* ‘God’

8. Science

agriculture [LKK]

puör ‘cultivation’

analysis [LKK]

läth ‘filter’ • semantic shift

cerebral [ND]

kene nyith ‘(referring) to the brain’ • phrase group

chemist [DLT]

kemüith < Eng. *chemist*

chisel [ND]

zamil < Ar. *zamiil*

climate [DLT]

klima < Eng. *climate*

clinic [ND]

qon wal ‘room (of) remedy’ • phrase group

compass [DLT]

kompäth < Eng. *compass*

dental [ND]

kene lec ‘(referring) to teeth’ • phrase group

dentist [ND]

akim lec ‘doctor (of) teeth’ • phrase group of Ar. *ḥakiim* ‘wise’ and Dinka *lec* ‘teeth’

doctor [AM, ND]

akiim, akim < Ar. *ḥakiim*, orig. ‘wise’

doctor [ND]

beny wal ‘elder (of) remedy’ • phrase group

drug [ND]

wal ‘remedy, cure’ • semantic shift

epidemic disease [ND]

tuany pinyinhom ‘disease over/on the earth’ • phrase group and compound
(*piny* ‘earth’ + *nhom* ‘over/on’)

gas [DLT]

gäth < Eng. *gas*

gold [ND]

zab < Ar. *dhahab*

hashish [ND]

tap rac ‘evil tobacco’ < Ar. *ḥashḥish* • phrase group

hospital [DLT]

pan aküim • phrase group of Dinka *pan* ‘house’ and Ar. *ḥakiim* ‘doctor’

hospital [DLT]

hothpitol < Eng. *hospital*

ice [ND]

talḡ < Ar. *thaldj*

intellect [ND]

nhom raan ‘head/brain (of) person’ • phrase group

iron (noun) [ND]

weeth (sing), *weu* (plur) • *weu* also means ‘goods, means, money’

kilo [DLT]

kilo < Eng. *kilo*

lava [DLT]

laba < Eng. *lava*

looking-glass [ND]

mandhara < Ar. *manzara*

magnet [DLT]

magnet < Eng. *magnet*

medicine [ND]

wal ‘cure’ • semantic shift

negative [DLT]

nekitip < Eng. *negative*

per cent [ND]

tene biantok ‘(referring) to one hundred’ • phrase group

biantokic ‘of/in hundred’ • compound

pharmacy [ND]

qon wal ‘room (of) medicine’ • phrase group

physician [ND]

raan wal ‘person (of) medicine’ • phrase group

pill [ND]

nyin wal ‘eye (of) medicin’ • phrase group

plant [ND]

wal • semantic shift: *wal* means also ‘pasture’, ‘cure, remedy, medicine’

poison [ND]

wal rac ‘medicine evil’ • phrase group

positive [DLT]

pothithip < Eng. *positive*

positive pole [DLT]

pol pothithip < Eng. *positive pole*

scale (ladder) [ND]

selim < Ar. *sillim*

scales (of weight) [ND]

mizam < Ar. *miizaan*

silver [ND]

fadda < Ar. *fiḍḍa*

snow [ND]

dengker ‘rain (of) spring’ • compound of *deng* ‘rain’ and *ker* ‘spring’

temperature [ND]

tuc ku wir ‘warmth and cold’ • phrase group

volcano [DLT]

bulkan < Eng. *volcano*

9. Sports and entertainment

ball [AM]

kuura < Ar. *kuura*

cinema [DLT]

thinema < Eng. *cinema*

football [ND]

atuek ‘small wooden ball used in traditional Dinka games’ • semantic shift:

goal [DLT]

goon < Ar. *goon*

music [ND]

musica < Ar. *musiiqa*

referee [DLT]

rapheri < Eng. *referee*

10. Technology

aeroplane [ND]

taiara < Ar. *tayaara*

aeroplane [ND]

rian nhial ‘vehicle above’ • phrase group; originally *rian* meant ‘canoe’

aerodrome [ND]

riang taiara ‘empty place (without trees) for aeroplane’ • phrase group of Dinka and Arabic words

auto [ND]

rot ‘self, selves’ • semantic shift:

automobile [ND]

trumbil < Eng. *automobile*

automobile [DLT]

turumbil, thrumbil, thrurum < Eng. *automobile*

battery [DLT]

batteria < Eng. *battery*

bicycle [ND]

akaja-weeth ‘horse/donkey (of) iron’ • phrase group of an Arabic loanword (Nebel 1979:150+131) and Dinka *weeth*

brake (noun) [ND]

fermala < Ar. *farmala*

brick [ND]

tup < Ar. *tuub*

bridge [ND, DLT]

kubra, kumbur < Ar. *kubri*

bullet [ND]

rasas < Ar. *raṣaaṣ* • [s] maintained

bus [DLT]

bääth < Eng. *bus*

button [ND]

zerar < Ar. *zaraar*

car [ND]

arabia < Ar. *ʕarabiya*

carpenter [ND]

najar < Ar. *najjaar*

cart [ND]

arabiya < Ar. *ʕarabiya*

cart [ND]

rian piny ‘vessel (of/on) ground’ • phrase group

cassette [AM]

carit < Ar. *shariit*

clock [ND]

kuenakol dit ‘counting the sun (day) big’ • phrase group

computer [DLIA]

kombiötar, kombioter < Eng. *computer*

copy (noun) [ND]

kit ‘colour’ • semantic shift

driver [ND]

raan thel riari ‘person driving vehicles’ • phrase group

electricity [ND]

riel elektrik ‘electric power’ • phrase group of Dinka and English words

e-mail address [DLIA]

i-meeil adëreth < Eng. *email address*

engine [ND]

makana < Ar. *makana*

envelope [ND]

qon athor ‘room (of) letter’ • phrase group

file (tool) [ND]

mabrad < Ar. *mabrad*

glass [DLT]

gelääth < Eng. *glass*

gramophone [ND]

makana jam ‘machine (of) speech’ • phrase group of Ar. *makana* and Dinka *jam*

grease [ND]

miok makana ‘oil (of) machine’ • phrase group of Dinka *miok* and Ar. *makana*

ink [ND]

piu gotgot ‘liquid (of) writing’ • phrase group

instrument [ND]

weu luoi ‘means (of) work’ • phrase group

iron (verb) [ND]

makua < Ar. *makua*

lamp [ND]

lamba < Ar. *lamba*

machine [ND]

makana < Ar. *makana*

(motor) benzene [DLT]

bendhin < Eng. *(motor) benzene*

nail [ND]

mucmar < Ar. *musmaar*

omnibus [ND]

trumbildit ‘big automobile’ • compound involving Eng. *automobile*

trumbil ë jang ‘automobile for people’ • phrase group of Eng. *automobile* and Dinka words

paint [ND]

buia < Ar. *buhiya*

paraffin [ND]

jas lamba < Ar. *ghaaz lamba*

photograph [ND]

sura < Ar. *suura*

piston [DLT]

pithon < Eng. *piston*

press (printed media) [LKK]

gäät ‘writing’ • semantic shift

press (news paper) [ND]

jarida < Ar. *jariida*

print (verb) [ND]

got makana dit ‘write (with) big machine’ • phrase group with Dinka words and Arabic loanword

press [ND]

makana dit gotgot ‘big machine (for) writing’ • phrase group of Ar. *makana* and Dinka words

pump [ND ND]

mafak < Ar. *munfaakh*

turumba < Ar. *trumba*

radio [DLT]

radio, rädio < Eng. *radio*

radio [AM]

raadi < Ar. *raadio* < originally from English

railway [ND]

dhöl weeth ‘road (of) iron’ • phrase group

recorder [AM]

musajil < Ar. *musajil* • [s] is not replaced by expected [t̪] <th>

robot [ND]

makana cit raan ‘machine without person’ • phrase group of Arabic loanword and Dinka word

sail (noun) [ND]

alanh riai ‘cloth (of) vessel/canoe’ • phrase group

saw (noun) [ND]

menshara < Ar. *manshara*

ship [ND]

riai • semantic shift: also ‘canoe, vessel, vehicle’

steamer [AM]

mabu(u)r < Ar. *baabuur*

street [ND]

dhöl geu ‘road of town’ • phrase group

tank [ND]

tonydit weeth ‘big jar (of) iron’ • phrase group

telegram [ND]

wel telegraf ‘word (of) telegraph’ < Eng. *telegraph* • phrase group and borrowing

wel cilik ‘word (of) iron cables’ < Ar. *silik* • phrase group and borrowing

telegraph [DLT]

telegrap < Eng. *telegraph*

telephone [AM, DLT]

telepuun, telepun < Ar. *telefuun* < originally from English

television [DLT]

telbidhiön < Eng. *television*, Ar. *telefizyön*

tent [ND]

qon alath ‘room (of) cloth’ • phrase group

train [ND]

gatta < Ar. *gatar*

train [AM]

gatar < Ar. *gatar*

train [DLT]

rian thilik ‘vessel (of) steel’ • phrase group

typewriter [ND]

makana gotgot ‘machine (of) writing’ • phrase group

watch [AM]

thaa < Ar. *saaʿa*

web site [DLIA]

webthait < Eng. *web site*

workshop [ND]

warca < Ar. *warsha*