4. Arabic

In this chapter I will examine whether the proposed model functions when using facts from Arabic. The ancestor of present-day Arabic was spoken in a well-defined area in the Arabian Peninsula, namely in the desert region north of the present-day state of Yemen, and south of the Fertile Crescent area of Jordan and Iraq. In the 7th century several groups, often called tribes, on this peninsula were united, and subsequently an empire arose that expanded its territory over a large area of the Middle East and North Africa under the flag of Islam. This expansion brought both Islam and the Arabic language to new territories. In the new lands Arabic evolved into different varieties, which are not always mutually comprehensible. Here I will examine the question of how the new forms of Arabic are related to the socio-linguistic history of their respective speech communities.

For this purpose I have chosen three modern varieties of Arabic with which to compare the verbal inflection of Classical Arabic. However, first I will discuss the emergence of the Arab people and the Arabic language, and then examine what the precise form of Arabic was from which the modern varieties developed. This latter issue is a question under dispute (cf. Versteegh 1997; Zwettler 1978), and important for the understanding of later Arabic history. The Arabic variety that was spread may have been Classical Arabic as it is represented in the Koran, but it may also have been a more colloquial form of Arabic, or a military koine which arose during the expansion. I will discuss the different perspectives on Arabic during the time of the rise of Islam in 4.1. There I will also discuss the general extra-linguistic history of Arabic, which is mainly the history of the Arabic Empire. Finally I will focus on the histories of the varieties I have selected here. After the historical sketch, I will turn to the Arabic varieties themselves; first of all I will present the data and analysis of the variety to which I compare the other varieties, that is, Classical Arabic. In 4.3 I will discuss a conservative form of Arabic, that is, Najdi Arabic, which is spoken in the Arabian heartland by the original Arab population, both settlers and nomads. Among the various Najdi varieties I have selected the dialect of the northern Najdi Shammar tribe, since this is a tribe which has led a relatively isolated life, in a relatively tight-knit community even by Najdi Arabian standards. Moreover, there are relatively ample data on this dialect, collected by Ingham (1982, 1994). In 4.4 I will discuss Moroccan Arabic. This variety is the most problematic of the three varieties discussed here. It is rather distinct from Classical Arabic, but how it changed is unknown. I will focus on the koineised city dialect of Fez, since this is a prime example of an Arabic variety which has had considerable language contact and which has been used as a lingua franca. Section 4.5 focuses on Nubi. This is a creole, which has Arabic as its lexifier. It came into existence in Sudan in the 19th century, and has typical creole characteristics, with respect to its structure as well as to its emergence. In 4.6 I discuss several scenarios proposed for the history of the Arabic varieties. Some authors, like Versteegh (1984) claim that there was initially a rapid change with subsequently a slow

\[42\] I will use the term ‘tribe’ for a culturally and socially distinct group, as is done in arabist literature (cf. Kupershoek 1995).
convergence towards other varieties of Arabic, while other authors like Diem (1978) claim that the diachronic developments in the Arabic varieties like Moroccan Arabic belong to the normal drift in Arabic, without any special breaks in its history. I will discuss which model best fits the facts presented so far. Finally, in 4.7 I will discuss how the change in Arabic can be captured in OT.

In this chapter I use the following terms: Old Arabic, Classical Arabic, Middle Arabic, Modern Arabic and Standard Arabic. By Old Arabic I mean all forms of Arabic spoken on the Arabian Peninsula before the spread of Islam, including Classical Arabic. With this latter term I refer to the particular form of Old Arabic as it has been written down in the Qur’an, and in old poetry before the spread of the Arabian Empire. Middle Arabic, is the term used for written forms of Arabic after the spread of Islam, in which influences from the vernacular or interference from other languages are apparent. Although it is used to obtain information about the development of Arabic, it is not considered to straightforwardly represent actual stages between Old and Modern Arabic (cf. Versteegh 1997: 114ff.). Modern Arabic is the term for spoken varieties of Arabic like the ones I examine here. Standard Arabic is the Arabic variety used for writing today, but also for more formal speech levels. Between the colloquial speech forms of Modern Arabic and Standard Arabic there is a continuum. The choice of the exact speech forms between these two poles depends on various factors like setting, topic, interlocutors, gender, age, urbanity, etc. (cf. Versteegh 1997: 189ff.).

4.1 Emergence and spread of Arabic

4.1.1 Pre-Islamic Arabic and the Arab people

Arabic belongs to the Semitic languages, and since the 1970s these are considered to be part of the Afro-Asiatic language family, together with subfamilies like Berber, Chadic and Cushitic, which comprise languages like Tamazight, Hausa and Somali. Semitic is typologically distinguished by a clustering of features like tri-consonantal roots, glottal consonants, paratactic constructions, and verbs consisting of roots with one prefix and one suffix in the imperfect. A subgrouping in the form of a traditional tree diagram can be composed neither for Semitic among the subfamilies of Afro-Asiatic, nor for Arabic among the Semitic languages. Versteegh (1997: 10) writes:

“Unlike the Indo-European languages, spread over a wide area and usually isolated from each other, the Semitic languages tended to be confined to the same geographic area (Syria/Palestine, Mesopotamia and the Arabic desert) and were often spoken in contiguous regions. This led to more or less permanent contacts between the speakers of these languages, so that borrowing between them was always a possibility. Borrowing typically disrupts historical processes of change and makes it difficult to reconstruct the original correspondences between the languages involved.”

The classification of Arabic therefore remains mainly typologically and geographically motivated, and the tree diagram of Figure 4.1 is only meant to give an approximate overview.

On the basis of the clustering of shared features, that is, shared innovations and shared retentions, east Semitic -Babylonian and Assyrian- is distinguished from a West Semitic group, which comprises a southern and a northern group.
Emergence and spread of Arabic

The southern group consists of Ethiopian languages like Amharic and Tigre, and of languages spoken in the southern part of the Arabian Peninsula, like South Arabian. The northern group comprises Hebrew, Phoenician and Aramaic. Typologically and geographically, Arabic occupies a position between these two groups. In older works Arabic was classified as a southern Semitic language, but Hetzron (1976) adduces arguments for a grouping amongst the northern languages. Since then the discussion continues (cf. Cuvalay-Haak 1996: 5; Versteegh 1997: 21). The position of Arabic between the two poles is often explained in a historical scenario in which the speakers of Arabic hold an intermediary position between the southern and northern Semitic peoples. Such a position is at least attested for a later period when Arabs recurrently changed from a nomadic life to a sedentary life and vice versa at the fringes of the Arab Peninsula.

The splitting and subsequent mixing of the various languages in the Semitic sub-branches is conjectured to have started from about 1,000 BCE (cf. Versteegh 1997: 12). At that time a nomadic population had come to live in the Arabian Peninsula. These nomads probably had detached themselves from a sedentary civilisation. This so-called bedouinisation was made possible thanks to the domesticisation of the camel, which allowed the Arabs to cover larger distances on a higher speed than before. After some technological advances like the invention of a saddle and a saddle-bow, these nomadic bedouins gained importance in the region. They were called Arabs, and, according to the scattered evidence, spoke a kind of Arabic. These nomads traded along the caravan routes through the desert between the north and south. Their power and influence depended on the events in the northern Empires of the Persians, and of the Romans, followed by the Byzantians, and in the southern Empires, such as the 3rd century Himyar, in the present-day state of Yemen. Many Arab tribes were allied to one of these empires, which influenced the Arabs in their culture. For instance, ideas about monotheism, which prevailed in the north in the 4th century, were taken over by the Arabs, although the heart of the Arabian Peninsula, with Mecca as its main commercial centre, remained unaffected. The Arabs grew in power between 400 and 600 CE, because of the fall of the South Arabian Empire, and the constant fighting between Persia and Byzantium that weakened these northern states.

Figure 4.1 Tree diagram of Afro-Asiatic languages

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43 I use the neutral terms CE (Common Era) and BCE (Before Common Era), instead of BC and AD.
Before the rise of Islam Arab culture was largely nomadic. Only a few settlements existed around oases. These oases helped to support the nomadic way of subsistence. Nomadism implied that the Arabs lived in small tribes consisting of several clans. The tribe protected its individual members from drought and invasions, and a tribe had historical rights to a well and to pasture land. Pasture, caravan trading and inter-tribal raids were the main sources of income. In contrast with the organisation of later states, the tribes had no hierarchical structure. There were leaders -sheiks- but these acted only as a kind of spokesmen or representatives. The nomads were adverse to any subjugation. There was hardly any significant division of labour or social castes, neither was there an organised form of religion or a caste of priests. Belief in demons and ghosts existed however, and around 600 BCE Mecca had become the religious centre. Expressions of culture were mainly oral, and poetry was highly developed. In the 6th century poetry became even more vital and it gave all Arab tribes some sense of cultural unity and identity, which had hardly existed before. Weiss & Green (1985: 38) says: “Because the literary language of the poets was a standard one used throughout Arabia it, together with the poetry composed in it, fostered a vague sense of cultural unity among the Arabs which could not have existed at the level of everyday tribal life.”

The nomadism of most Arab tribes was diametrically opposed to the lifestyle of the sedentary centres like Mecca. In those settlements differences between the rich and the poor grew. The former egalitarian tribal clans were transformed into a hierarchy of socially and geographically distinct clans in the cities. The Bedouins values of group solidarity and sharing were quite opposite to this social and moral climate. Furthermore, surpluses were built up, and a monetary and tax system redistributed the wealth in the cities. Leadership became stronger with one monarch, and a judicial formal system was introduced. In the cities monotheism became more common than among the nomads. While Mecca flourished as an international trade centre under the direction of the Quraysh tribe, dissatisfaction with this morality grew, and many longed for the former group solidarity of the Bedouin, although they wanted to keep their individualistic city lifestyle. This formed the background to the success and the popularity with which the teachings of Mohammed, the founder of Islam, were received.

Mohammed had been raised in Mecca, and received the holy word of God, the Qur’an from 610 CE onward. The Qur’an was a religiously inspired call for justice, and a call to subjugate oneself to one God, and his Prophet, Mohammed. Its spirit reminded one of the ‘code of the desert’, but it was adjusted to modern life. Weiss and Green (1985: 40) write: “It affirmed an essentially individualistic ethic. Whereas the tribal code had placed the emphasis on the responsibility of the group as a whole towards its own weaker members, the message borne by Mohammed proclaimed the responsibility of each individual under God to act rightly and fairly.” Mohammed first tried to spread this message in his own town, Mecca, but met with severe opposition from richer merchants. Because of this Mohammed fled to Medina in 622 CE. In Medina, a feud had caused dissent, and Mohammed managed to restore peace between the opposing clans. As a bringer of peace and justice Mohammed was accepted and he gathered his followers in the umma, the Muslim community. This caused rivalry between Medina and Mecca, and eventually Mohammed succeeded in conquering Mecca in 630 CE. Control over these two important cities led, through alliances with Bedouin tribes and proselytising, to the emergence of a united Arab empire in the 630’s.
Now the dispersed nomads were united for the first time in history. Weiss and Green (1985: 47) state: “By putting before the Arabs a monotheistic vision of life contained in an authentically Arabian scripture, Islam strengthened the vague self-identity of the Arabs and transformed them into a true people.” On the one hand the Arabs were united by a universal belief, while on the other hand, this belief was given shape by the Arabic language, culture and traditions, and led by ethnic Arabs. Ever since then, this polarity between universalism and arabo-centrism would lead to tensions in later empires and interstate relations. Another problem that led to tensions and conflicts were the differences between southern Arabian tribes and the northern Bedouin warrior tribes. Another problem, which still exists today, is between the Bedouins and the more settled populations. Although throughout history Bedouins have become sedentarised and vice versa, a difference has always been felt between these two life-styles, especially in northern Africa. Before I discuss the subsequent spread of the empire and the way Arabic changed during this spread I will give an account of the language situation during the earliest period of Islam.

4.1.2 Arabic at the beginning of Islam

Sources from which information about the early form of spoken Arabic is derived are the Qur’an, classical Arabic poetry, and commentaries of early Arabic philologists in dictionaries and grammars as well as descriptive works on the life of Mohammed. These works also laid the foundation for a norm and a tradition of writing in Classical Arabic, which later evolved into modern Standard Arabic. While this development of written Arabic is relatively well known, the exact form of the spoken Arabic of that time remains unclear and disputable. Two positions on the relation between written and spoken language are to be found in literature. On one hand it is claimed by authors like Blau (1973), Nöldeke (1904), Versteegh (1984) and by earlier Islamic philologists that there are no important differences between spoken and written Arabic of that time, while on the other hand it is held that in Old Arabic a cleavage between spoken language and written language already existed which evolved finally into the difference between the modern Arabic varieties and standard Arabic. This latter position is held especially by Corriente (1971), Diem (1974) and Zwettler (1978). Furthermore, there is disagreement about the way and extent the eastern and western spoken dialects differed. Several smaller phonological differences are agreed upon (cf. Versteegh 1997: 41ff.). However, whether the dialects also differed in the inflectional suffixes remains an unanswered question. Now, in this section I will turn to this issue of the occurrence of word-final vocalic case and mood suffixes in the various varieties of Arabic around 600 CE.

Examples of these mood suffixes are given in bold in the following verb forms: ‘she writes (ind.)’, taktubu, ‘that she write’ taktuba. In early Islamic studies it is claimed that Mohammed spoke in the same language, the Meccan dialect of the Quraysh tribe, as that in which the Qur’an was written. This would be the highest form of Arabic. On the other hand, the language of poetry, and its speakers, the eastern Bedouins, were celebrated as preservers of the purest language. In addition, the language of the Qur’an was claimed to be identical to the language of their poetry. This supposed uniformity clearly leads to contradictions (cf. Schipper & Versteegh 1987: 44; Versteegh 1997: 38), because at the same time differences between eastern and western, nomadic and sedentary dialects were acknowledged and described.
Vollers (1906) was the first to propose as a solution to these paradoxes that there was a difference between the form of spoken Arabic around 600 CE and the written form of the Qur’an. He suggested that the dialects of the eastern nomads and the western sedentarised population differed, and that the western dialects, under influence of the ‘decadent’ city life had already lost some inflections. In its first conception the Qur’an would have been written in the western vernacular, and would have been standardised later in the more prestigious eastern dialect in which classical poetry had been written. This view on the Qur’anic language has been refuted on philological grounds by Nöldeke (1904) (cf. also Zwettler 1978: 118; Versteegh 1997: 40), who stated instead that although there might have been changes in the spoken language, there would be no reason to assume that the colloquial would differ fundamentally from Mohammed’s writings.

Arguments for supposing a similarity between the speech of, at least, the eastern Bedouins and the written language is also found in reports by early Islamic philologists about the pure unspoilt state of Bedouin speech. These should not be taken at face value, however, according to Zwettler (1978). Versteegh (1997: 50) remarks: “The force of this argument partly depends on the value which we attach to reports about Bedouin purity of speech…Of course, these reports may also be regarded as symptomatic of the generally nostalgic attitude towards the Bedouin past and the desert.” A further argument for a synthetic unchanged state in the spoken Arabic of the time is that there are still modern Arabic Bedouin dialects that display case and mood inflections. However, Zwettler claims that these are only defective vestiges, occurring mainly in idiomatic and poetic expressions and in borrowings from the Classical literature, and adds (Zwettler 1978: 122): “Given this contemporary state of affairs, it is to be wondered whether anyone would ever have considered proposing that the dialectal tanwin had originated in a three-vowel desinential system, had he not previously been aware that such a system had operated in the Classical ’arabiya.”

Another argument for the existence of inflections in the colloquial language is that in the versions of poetry written down later, remarkably few errors occur. Versteegh (1997: 51) says: “Such [error, WK] forms are usually a corollary of a sharp divergence between a literary norm and a colloquial variety, and their absence would seem to point to a more widespread usage of the case endings than the limited one advocated by the proponents of the ‘poetic koine’ [see below, WK],” but continues, “One could, of course, object that any errors would have been weeded out by later collectors of poetry and copyists anyway.”

Instead of trying to prove the similarity between spoken and written language, Zwettler claims that the language, in which the Qur’an was written and the poetry chanted was different from the vernacular and he calls this variety a ‘poetic koine’ Koiné, as Zwettler (1978: 101ff.) conceives it, should not be taken as a practical levelled compromise dialect between several dialects. This early Arabic koiné must be understood as a special register in which poetry was performed and in which also the Qur’an was written. It would have been transmitted orally, and would have contained many archaisms, borrowings, retentions, and dialectisms. Zwettler (1978: 97ff.) produces additional

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44 This is however not a very strong argument. Since the classical sources are available, modern suffixes are justifiably viewed from a different perspective as possible relics from these sources. Analogically, one should not relate the inflectional suffixes of, e.g. modern Hindi and modern Danish, because these can only be related to each other with hindsight from some older sources.
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The difference between the language of the Qur’an and western dialectal features is explained by stating that Mohammed used this koiné to give his recitations more prestige. By distinguishing a koiné and a vernacular, Zwettler also explains why the modern dialects are all less synthetic than Classical Arabic. According to Zwettler, the modern varieties do not stem from the koiné but from the Arabic vernacular in which the suffixes had already disappeared around 600 CE. For this hypothesis Zwettler adduces evidence from Corriente (1971), who examined the functional load of the case and mood suffixes in Old and Middle Arabic texts and concluded that only in very few cases the inflections had a function in the sentence. For Corriente this means that in the Arabic dialects the erosion of the suffixes was already on its way, while for Zwettler it constitutes further evidence that they had already completely disappeared from spoken language. Zwettler considers the existence of such non-functionalities as more plausible in a variety which serves certain metrical and rhythmic purposes in poetry (Zwettler 1978: 145).

However, the non-functionality of inflectional suffixes does not mean their automatic disappearance. As apparent in e.g. Icelandic, languages are full of non-functionalities, and there are no obvious omni-present forces that reduce language to more functionality. Furthermore, the fact, produced as an argument by Zwettler (1978: 133), that the disappearance of the inflectional suffixes also took place in other Semitic languages, or that they are absent from all modern dialects still does not prove that they were already absent from the Arabic of 600 CE as well. In addition, reasons must still be found to account for the loss of suffixes in old Arabic. Moreover, even if the loss of short vowel suffixes had already occurred in Old Arabic, the change from a synthetic to an analytic language form would still not have been explained, because this change comprised quite a bit more than the loss of these suffixes. Long vowel and consonantal suffixes were lost as well (cf. Versteegh 1997: 49, and below). What can be concluded from Corriente (1971) is not a positioning in time, but only that the loss of the vocalic suffixes would not have hampered the language user too much.

Another argument for the loss of inflectional suffixes is found in Diem (1974) who states, on the basis of inscriptions, that already in Nabataean Arabic of the 1st century, the vocalic suffixes were disappearing. However, this cannot be taken as conclusive evidence, since Nabataean Arabic was spoken in a language contact area, and influence from the more analytic Aramaic cannot be excluded (cf. Versteegh 1997: 47). Further arguments for an early loss of the inflections are taken from reports of early Islamic philologists in which errors and mistakes in the inflections are commented upon. This would show that the language was already changing in the early days of Islam. However, Versteegh, (1997: 50) argues that the opposite can also be claimed, when he says: “the point in the anecdotes is precisely that the target language of the newly converted, the language of the Arabs which they wish to imitate, still contained declensional endings.” Finally, intricate arguments pro and contra the existence of inflection in the dialects come from Qur’anic studies (cf. Versteegh 1997: 47ff; Zwettler 1978: 122ff.), which are also inconclusive. Versteegh (1997: 48) concludes that: “The conclusion from pre-Islamic and Qur’anic orthographical practice is that neither can give a definitive answer to the question about the presence or absence of case endings.”
In conclusion, it is generally accepted that a kind of special oral register, or poetic koiné, existed in Old Arabic, which was used for poetry. In this register the Qur’an was conceived. The distance of this koiné to the spoken language remains unclear. This continues to be the topic of a complex and as yet inconclusive debate. Holes (1995: 10) states:

“As a special register of Arabic it may have gradually evolved in conditions, and then perhaps become fixed by constraints and conventions, which did not apply to everyday speech, though the question of the extent of the grammatical differences between the poetic idiom in its fully developed form and that used in the everyday spoken Arabic dialects of the seventh century is finally irresolvable given the nature and amount of the data available.”

Therefore, the loss of inflections must have happened some time, but it cannot be linked to specific social or cultural circumstances with any certainty. Other changes will also appear to be difficult to locate exactly in space and time, but, for those changes, to which I will turn below, at least the original situation is known in spoken Arabic of 600 CE. About the relevance of the question discussed in this section Versteegh remarks (1997: 51):

“The general conclusion is that even when some of the changes which Arabic underwent in the post-Islamic period may have been present in pre-Islamic speech, the fundamental structural differences between the Old Arabic of the pre-Islamic period and the new Arabic represented by the contemporary dialects still need an explanation. The emergence of this new type of Arabic in the period of the conquests is characterised not only by the disappearance of the declensional system but also by a complex of other features.”

4.1.3 The spread of Arabic

Arabic spread initially during the expansion of the Arabic Empire in the 7th century. In this section I will first sketch the general social and cultural background of the spreading of Arabic over the new Arab lands, after which I will focus on the individual histories of the communities where Najdi and Moroccan Arabic, and Nubi is spoken.

4.1.3.1 Expansion of Arabic

Here I will briefly describe the history of the Arab Empire focusing on contacts between native Arabic speakers and new learners, and on the network structures for the use of Arabic.

After Arabia was united in 630 CE (cf. section 4.1.1), for the next hundred years the Arabic Empire rapidly expanded its boundaries northwards to Syria and Iraq, eastwards to the river Indus, and finally westwards as far as Morocco and Spain (cf. Figure 4.2). The conditions that fostered this expansion were of several kinds, both demographic, cultural and external-political. Weiss & Green (1985: 58) present the following factors: population pressure, a warrior culture, weakness of the Byzantine and Persian Empire, the presence of Arabs outside of Arabia before the expansion, and the equally unifying and inspiring force of the new religion. In the conquered territories the people were allowed to retain their own religion, and their own way of life. Often the Arabs lived in separate settlements, which were originally military camps, and which later grew into full-blown cities. Arabian rule initially meant that taxes were collected and internal peace was guaranteed in exchange. The administration was often in local hands, and Arabic became the language of administration at the end of the 7th century. During the earliest conquests
Arabs settled mainly in newly founded military camps, but sometimes in already existing cities as well. Between 200,000 and 400,000 Arabs migrated to Syria, which already had a population of about 4 million. Egypt initially only had 80,000 Arabs in a population of 8 million, and the number of Arabs in the whole Maghreb was probably between 70,000 and 150,000, although later, from the 11th until 14th century, about a million Arabs migrated to the Maghreb which had consisted of five million people until then.

Figure 4.2 Map of the Arab lands

In the settlements many Arabs married Jewish and Christian non-Arab women. After 750 CE Arabs were also allowed to migrate to the countryside. Language contact predominantly took place, especially in the beginnings of the conquests, in the cities, in contact situations of taxation, trading and administration. Versteegh (1984: 66) writes:

“The garrison towns that had been founded in the course of the early campaigns grew into large centres of social attraction and civilisation to which people flocked in order to participate in the prestigious new order. Here, the necessity of learning as quickly as possible the language of the new masters was felt acutely; here, too, the polyglot society that is typical of early Islamic urban civilisation developed.”

According to Versteegh (1997: 93), the arabicisation occurred at a faster rate than the process of islamisation, and it was completed earlier. However, for a long period other languages must have been spoken in the Arab lands, such as Coptic, Greek, Persian, Berber, Aramaic, etc. The success and speed of arabisation generally depended on the extent of migration and the measure of assimilation, the process of urbanisation, the pre-conquest contacts with Arabs in the new territories, and the success of Islam (cf. Holes 1995: 28).
The Arabic empire was unstable, and the central power of the Caliph could no longer be sustained after 750, when the empire fell apart. The arabisation and islamisation continued however, especially in the lands adjacent to Arabia. In the following centuries several smaller empires arose and collapsed again because of internal struggles over taxes, and religious issues, and because of external threats. From 1050 until 1350 a slow and steady migration of Arab Bedouins took place westwards as far as Morocco in search of new pasture lands, which meant a second arabisation (see also section 4.1.3.3). From the 13th century until 1517 Turkish Mamluks ruled the central parts of the former Empire, who were succeeded by the larger empire of the Ottomans which lasted until 1600. After 1600 independent states arose, and European powers began to extend their influence to the Arab lands. In the 19th and 20th centuries most Arab countries were occupied by western powers. They became independent states only after the Second World War. In spite of the many differences, there is still a strong feeling of solidarity amongst the Arab nations of today, because of their shared religion and their common language and history.

From earliest times until the age of imperialism, a typical Islamic society existed. It had strong internal bonds in the various Arab lands (cf. Weiss & Green 1985: 145ff.). The Islamic order was sustained by a military force, and it constituted a jurisdiction. In contrast with earlier nomadic Bedouin culture, the Islamic society was strongly city-centered. Islam spread from city to city, and reached the countryside only later. Rural communities were mainly seen as a way of making easy money, and as a consequence agrarian activities lessened during the centuries of Islamic rule. In the cities the neighbourhoods were segregated along ethnic and religious lines, and sometimes also along class divisions. Nevertheless, there was considerable social mobility. The Islamic society was strongly intertwined with the Arabic language, which alongside its religious function, was also used for administration, science, literary culture and all other high culture.

4.1.3.2 Najdi Arabic

An important group in my argument are the Arabs living in the central part of the Arabian Peninsula, particularly the northern Najdi tribes of the Shammar. I will first sketch their background and will then focus on three themes: (a) the contact the Najdi Arabs, especially the Shammar tribe, have had with others; (b) their attitudes with respect to their own language; (c) the homogeneity of their speech community. In the literature different names are used for the regions of Arabia and their people. I will use ‘Najd’ for the central and northern area of the Arabian Peninsula and ‘Najdi’ for the people who live there (cf. also Figure 4.2).

Background

The historiography about the Najdi Arabs is limited and interspersed with prejudices. On the one hand the Najdi Arabs are depicted as the bearers of traditional values like solidarity and hospitality, and of Islamic values like justice and faithfulness (cf. western sources like Musil 1928 and Glubb 1960, and Arabic sources described in Versteegh 1997). On the other hand they are described as primitive, violent, and in need of

45 Cf. Glubb (1960: 30, 37) for a description of Bedouins firstly as children, and secondly as innocent people who have not eaten from the apple of the tree of knowledge (cf. also Said 1978).
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guidance from some outside power, either Islam, or European civilisation. After these
caveats about the sources, the following history can be sketched.

As described in 4.1.1., the Arabian Peninsula has been inhabited by Arabs since at least
1000 BCE, that is, since the domestication of the camel. The power of the nomadic
Arabs rose after the invention of the camel saddle, and their control over the caravan
trade on the peninsula increased. In the 7th century the Bedouins converted to Islam, and
under this new banner the surrounding lands were conquered and the Arab Empire was
founded with Medina as its capital. In 661 CE, however, Damascus in Syria became the
capital. While the Arab tribes continued to play their role in the Arabian Empire for
centuries, the heartland of Arabian nomadism itself fell outside the mainstream of Arab
history, especially after the trade routes had changed and trade had decreased in the first
centuries after the Arab expansion. Glubb (1960: 41) says: “Central Arabia, which had
originated this world-shaking movement [that is, the Islamic expansion, WK], returned to
its former isolation.”

Between the 8th and 20th century social life changed little, in a thinly populated area, of
which Glubb (1960: 24) says: “The oases of Nejed [that is, Najd, WK], however,
resembled rather an archipelago in the desert sea, with long bays and creeks of wasteland
running in between one settlement and the next.” Around the belt of oases the desert
stretched out, as far as Yemen in the south, the religious cities in the west, the Gulf coast
states in the east, and the Jordan, Syrian and Mesopotamian cultivated areas in the north.
In these settlements there was agriculture and a little trade. Nomads were also present in
groups of around 600 people. These nomads were camel breeders and traversed huge
distances in search of pasture land. They also visited the lands bordering the desert for
trade purposes, and they were involved in the caravan trade across the desert. Caravans
and settlements were frequently raided by them. There was much inter-tribal warfare, and
in most periods there was no judicial power above the tribal level. Donner (1981: 41)
says: “The tribe was thus not only the basic social unit, but also the basic political
grouping around which relationships of power were ordered - that is, politics was
essentially a question of intertribal relations.” The settlers were dependent on the
protection and benevolence of the nomads, who, being mobile, could easily raid the
settlements without much chances of being harmed themselves (cf. Musil 1928: 257). In
their turn the nomads were dependent on the settlers for water during the dry period in
the summer, and for the purchase of goods (Ingham 1994: 3ff.).

The Shammar, who speak the northern Najdi dialect under examination here, are a
northern tribe, who have lived in the area since pre-Islamic times, although some groups
allied with the Shammar a few centuries later (cf. Sowayan 1992: 7). They probably
expanded their territory in late medieval times (cf. Ingham 1982: 73). In the middle of
the 18th century, Muhammad ibn Abdel Wahhab, who studied in Medina, Basra and
Damascus, founded the Wahhabite denomination, which propagated a religious return to
the Qur’an and the words of the Prophet. This persuasion received support from a local
leader, Muhammad ibn Saud, and gained more influence in the region. In the early 19th
century the Wahhabites conquered the Gulf coast, the holy cities in the west, and
threatened Baghdad and Aleppo in the north. In the 1810s tribes from the lands adjacent
to Najd, and soldiers from Egypt under the protection of the Turks, marched against the
Saudi Wahhabites, and overthrew their regime in 1818. Until 1843 Egypt wielded power
in the region, but then the Saudi’s regained control. In the late 19th century the northern
part of Najd, with Ha’il as its centre, and the Shammar as one of the main tribes, developed its own dynasty under the Rasheeds, who expanded northwards and westwards, and attacked Saudi territory in 1887. From 1887 onward this northern dynasty ruled the whole of Najd, until in 1901 the southern part was reconquered by a Saudi leader. The Rasheeds called for the help of the Turks, and these suppressed movements of unrest in the early 20th century, but soon left the country again. Bloody competition within and between the dynasties of the Saudi’s and the Rasheeds continued in the 1900s. Various alliances were made between the imperial powers of Britain and Turkey, the Rasheeds, the Saudi’s, and the western shareefs of Mecca. The Saudi’s began to propagate settled life instead of nomadism, and tried to stop the culture of raiding. They managed to establish their power further in 1921. The political relations in the region in the 1920s and the religious strife of the Saudi’s made it also possible to subsume the religious cities into the new Saudi state. In 1932 Saudi Arabia became a fully independent monarchy.

In the 1930s economic depression threatened internal stability, but in the decades after World War II the economy prospered again, when the Saudi’s succeeded in controlling the oil fields (cf. Mejcher 1991: 486). Tribes started to communicate more with each other, and koinisation of Arabic occurred on a super-tribal level in the capital city, Riyadh, cf. Ingham (1994: xii): “…the emerging standard avoids certain local features so that in fact Riyadh Standard speech is approaching the nature of a Koine so that if a standard does emerge, it may be rather less Najdi in nature than the dialects of the other towns of Central Najd.” I will however, no longer discuss these developments, since the Shammar variety of Najdi Arabic I describe here is the traditional variety spoken by the older inhabitants of the northern Najd.

Social factors

It should be clear from the sketch above that the northern Najdi have not always lived in complete isolation from outside influence. Settlers sent out caravans to Mesopotamia, Syria and Egypt, while the nomads themselves could also be found in the centres of trade on the fringe of the Arabian Desert. On the other hand, traders, and certainly pilgrims, must have passed through Najd for centuries, and at least some traders would have settled permanently in the larger towns of Najd. In the 19th century Ha’il, the major town in the northern Najd, and the centre of the Shammar tribe comprised about eighty families of merchants, out of a total of 4,000 families, who hailed from an-Nej̤ef in Irak (cf. Musil 1928: 253). Although these merchants may have been richer than the other settlers, their way of life, or their speech did not have a higher prestige than that of the native Najdi Arabic speakers. According to Kurpershoek (pers.comm.) the Najdi considered themselves the best, especially with respect to their language.

Najd has never been tempting for invaders, and, larger mass migrations and revolts seem to have left Najd untouched, cf. Glubb (1960: 26). Instead of migrations into Najd, the direction of movement has always been outwards. The Arabian heartland has been the source from which people, and cultural and linguistic traits, spread through the surrounding lands (cf. Johnstone 1967: xxiii). Several sources describe how in earlier as

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46 The economy of Saudi Arabia before the oil boom depended largely on the large numbers of pilgrims visiting the holy cities. Mejcher (1986: 472) mentions the number of 116,000 pilgrims for the year 1930.
well as more modern times former nomads settled along the Euphrates and the Gulf Coast. Ingham (1982: 14) says: “...the important point from the linguistic point of view is the existence of a continuous process of nomadic population movement northwards through Arabia to the Syrian bādiya area” (cf. also Musil 1928: 316ff.). Population pressure has been seen as one of the factors stimulating the spread of the Arabs in the 7th century. The opposite movement, settlers from outside of Arabia becoming nomadic on the Arabian Peninsula, is not reported in modern times.47

Although there were no mass invasions from outside Arabia, there have been a substantial number of African slaves on the Arabian Peninsula. They were effective in securing the life and the ruling of the local leaders, since they had no relatives or interests to share with nomads or settlers. They were, therefore, generally feared and avoided by the population, cf. Musil (1928: 303). These black slaves must have learned Arabic as a second language, or Najdi Arabic as a second dialect. Because of their low status, and their restricted contact with settlers and nomads, they probably have not had much influence on the high status Najdi variety of Arabic.48 Even today, 5,300,000 out of 22,000,000 inhabitants are estimated to originate from abroad (CIA 2000). These immigrants also have a very low status, and there are no reports that they have any influence on Saudi Arabic. However, there has probably been some bilingualism by children with non-Arabic mothers (cf. note 48). Whether such contacts occurred to the same extent everywhere in Arabia remains, however, to be seen. The people of the Najdi region, and some tribes of Iraq are reported to have an ideal of racial purity, and they refer pejoratively to the more mixed coastal population as “non-Arabs” (cf. Ingham 1982: 24).

Within Arabia the tribal based society of Najd stands out as a distinct social and cultural entity (cf. Kurpershoek 1995: 4ff.). Its culture was based on the values of the nomads. Ingham (1994: 4) says: “The values and traditions enshrined in the oral literature of the area is that of the martial clan tradition of the nomads in which hospitality, protection of fugitives and loyalty to the clan emerge as the attributes of the idealized nomad.” Already in the days before the Islamic empire the nomads’ culture was focused on the most easily transportable cultural symbol, that is, language. The Bedouins much appreciated poetry and oral recitations, making use of ancient conventions and an extensive and varied vocabulary, which was not restricted to one segment of society, cf. Kurpershoek (1999: 49). The poems articulated eternal recurring themes like war, desert life, and love. With help of the shared language conventions a sense of unity in space and time was created. The Najdi poetry functions as a standard that is more homogeneous than the different Najdi dialects, and seems to put a break on Najdi Arabic language change.

According to Ingham (1982: 29) there would be a difference between nomads’ and settlers’ dialects with respect to the distribution of isoglosses. Since nomadic tribes either stuck closely together or split suddenly, relations between nomadic dialects can be depicted in a tree structure. Different settler communities, however, remain in contact

47 Ingham (1982: 32) remarks that inside Arabia, however, the boundary between nomadism and a settled life is less sharp.
48 However, Ingham (1982: 30) remarks: “The Dhaifir are reputed to be of mixed origin combining Shammar and Central Najdi elements with, it seems, a high degree of ex-slave admixture who moved over to the south Euphrates in the early 19th century” [italics added by WK]. More details on this ‘admixture’ are, unfortunately, not available.
with their closest neighbours longer, and settlers’ dialect relations fit better to a wave model (cf. Ingham 1982: 29). According to Kurpershoek (pers.comm.), however, the dialects in Najd cannot be divided in nomads’ versus settlers’ dialects, neither on linguistic grounds, nor on social grounds since the internal social mobility in Najd has always been high.

Although the pilgrim’s road to Mecca passed Ha’il, contact of the Shammar with the outside world was limited. While other tribes used Syria, Mesopotamia or the Gulf coast for grazing in the summer season, the Shammar used the inner Arabian settlement area around Ha’il (cf. Ingham 1982: 72ff.). The Shammar tribe also stands out because their main town, Ha’il lies at the foot of a mountain range and is considered by them to be impregnable. Therefore, according to Ingham (1982: 15-17), there would have been less migration of tribes in the Shammar territory, and there would have been ample opportunity to build up a more stable community, with stronger ties between nomads and settlers than among other tribes. Kurpershoek (pers.comm.), however, doubts whether the Shammar community is more stable than other communities in the region. The central and southern Najd may contain equally stable communities, but remain unnoticed because little research has been done in this area.

**Conclusion**

- Subsistence has hardly changed among the Najdi Arabians since the days of the early Islamic expansion.
- There has been no abrupt dialect mixing or levelling, but only slow diffusion in the Central Arabian settlements.
- In the trade centres in Mesopotamia, nomads and settlers came in contact with speakers of other Arab dialects and perhaps other languages, but not on a permanent basis.
- In Najd itself most non-Najdi Arabic speakers were only on their way through, for trade or pilgrimage. Some black slaves may have remained longer, but these held a low position in society.
- Najdi Arabic had high prestige as an expression of Arabic nomadic culture. It served as a reservoir from which highly valued oral poetry could be composed and in which old poetry could be preserved. In addition, its close relation with Classical Arabic gives it further high prestige.
- Among the Najdi nomads, the Shammar nomads had fewest contacts with the outside world, because, unlike other tribes, they were not affiliated with settlements outside inner Arabia itself.

### 4.1.3.3 Moroccan Arabic

Now I turn to the history of Moroccan Arabic, and especially to the modern urban dialect of Fez. Although data on this history are rather scarce, especially about the history before the 16th century (cf. Lévy 1998: 18), Fez is a good example of an Arabic speech community halfway between a Type 1 and a Type 2 community.

The Islamic Empire was expanded to the Maghreb (modern Morocco, Algeria and Tunisia) around 650 CE. According to Versteegh (1984: 64), this first immigration wave brought at most 150,000 immigrants to the region. As elsewhere these built military
settlements, which expanded into new cities. The nomadic Berbers, the original population, were attracted to these settlements to serve as soldiers in the Arab army (cf. Abun-Nasr 1987: 3), and adopted Islam without much resistance. After their conversion they themselves began to spread Islam. Since that time Islam, Arab culture and the Arabic language profoundly influenced the Berbers, and soon Islam was no longer considered as a symbol specific to the Arab people.

Although Morocco was ruled by Islamic Berbers in the 8th century, more thorough-going islamisation and arabisation would not start before the Arabic Sunnite Idris, with support from a Berber tribe, founded a new empire which had Fez as its capital in 809 (cf. Marçais 1961: 182). At the beginning of the 10th century the Idrisite state fell apart, and the north-western Maghreb became the centre of the conflict between the Shiite Fatimids in the east, and the Sunnite Umayyads of Spain. In search of land, and for political reasons, between 1050 and 1300 about a million Arab Bedouins migrated to the Maghreb, which had consisted of only five million people before this invasion (Versteegh 1997: 96). In comparison with the earlier Arab immigrants these groups had a culture that resembled the culture of the Berber tribes, since their nomadic life was closer to Berber culture than the urban life of the earlier Arabs. This large influx of immigrants, and the declining strength of the rulers in Spain and in the East led to an unstable period. In the next centuries the power in Morocco would be seized by three succeeding Berber dynasties (cf. Abun-Nasr 1987: 76-118). At the end of the 11th century the ascetic and militant Almoravids conquered Morocco and parts of Spain. They built many mosques and a new capital, Marrakesh, and they shaped Moroccan culture with elements from Andalusia. In the 12th century another alliance of Berber tribes, the Almohads, came to power and also conquered Spain, and large parts of the Maghreb. They had a more liberal stance on religious affairs, and under their rule North African economy and culture flourished. At the end of the 13th century the Marinids came to power. These were weaker than their predecessors, because the tribal rule became too weak with the growing importance of the cities. In the next three centuries the western plains alongside the Atlantic coast were populated with Arabic speakers (cf. Lévy 1998: 13). In the 15th century the power of the Marinids declined, and the influence from outside powers became stronger. The Ottoman Empire had expanded to Algeria, and Spain had become interested in the North African coast-line to set up support bases for the crusades. In the 16th century Morocco was united again by the efforts of a supra-tribal group, the Saʿdiyans. In the shadow of the Ottoman Empire Morocco developed as a prosperous state on the western fringe of the European and African trade routes. At the height of the success of the Saʿdiyans, at the end of the 16th century, their state reached as far as Timbouctou in present-day Mali. This empire collapsed because of succession troubles, and in the 17th century profits from trade declined sharply in Morocco because of the rise of the more profitable trade routes by sea. In the second half of the 18th century order was re-established, and trade prospered again in Morocco. In that century many Berbers who had lived at higher altitudes came down from the mountains and

49 One of these reasons was revenge; the Egyptians sent these tribes to the west, to destabilize the Maghreb region.
50 This invasion consisted of two large associations of tribes, the Banu Hilal, and the Banu Solaym, each consisting of further tribes and divisions.
settled in the lowlands. These latter two centuries saw much migration in Morocco because of outbreaks of famine and epidemics.

Meanwhile Morocco had developed a strong Islamic identity, and due to struggles and disputes with Christian countries Morocco had closed itself off to Europeans around 1800 (Abun-Nasr 1987: 297). Under economic pressure, this slowly began to change, and several foreign powers were threatening Moroccan independence, which resulted in occupations by Spain and France in 1912. At first there was not much resistance, and the French succeeded in exercising a divide-and-rule policy; they promoted the culture and language of the people who were least threatening at the time: the Berbers (cf. Abun-Nasr 1987: 369). In the 1930s however, several forces in Moroccan society began to resist foreign exploitation. When France’s power was weakened by the Second World War, independence was unavoidable. In 1956 Morocco became a fully independent monarchy. Against resistance the monarchy could maintain power with the support of the rich landowners and the leading military elite. Since independence the government has tried to stimulate a nationalist Islamic ideology and a Moroccan Arab identity to keep the various groups in society united, although recently the government has made overtures to the Berber population. Today Morocco is a developing country, with problems like overpopulation, and urbanisation. Its population has grown from 3,370,000 in 1921, to 8,200,000 in 1952, and 30,120,000 in 2000. Other estimates vary considerably. According to Grimes (2002), the literacy rate is between 30 and 50%; an estimated 65% of the population speak Moroccan Arabic, while another 20%, which are Berbers, speak Moroccan Arabic as a second language. The other 15% speak mainly Berber languages: Tamazight, Tachelhit, and Tarifit.

Since the earliest days of Moroccan history there has been a strong contrast between urban and rural life (cf. Abun-Nasr 1987: 11ff.). The first cities under Arab rule were newly founded centres of military activities, trade and administration and were not based on earlier Berber settlements. Fez was the first city of importance in Morocco, and it was the centre in a network of towns. In the 11th century a second important city was built, Marrakesh. It was only much later, when Europe grew in importance in the region, and after Arab tribes had settled in the Atlantic plains, that cities like Rabat and Casablanca became more important. From the 8th century until the time of immigration of the Hilal tribes Arabic was spoken in the cities, while in the countryside only Berber languages were used (Marçais 1961: 186). The majority of the speakers of Arabic in that period is estimated to be of non-Arab descent (cf. Rosenberger 1998: 51). People in the cities were engaged in long-distance trade, military operations, administration, and cultural and religious pursuits. Life in the countryside, in contrast, involved pastoralism, small-scale agriculture, and short distance trade. After the 2nd immigration wave, Arabic spread to the countryside. The relations between the cities and the countryside did not change, however. Only much later, after the 15th century, the balance of power between the tribes and the cities began to change (cf. Abun-Nasr 1987: 206). The city/countryside antagonism was also reflected in religious life; in the cities a more formal mode of Islam was adhered to, while the countryside was always more susceptible to mystic teachings of sufis. In the countryside another contrast arose; the mountainous areas were generally inhabited by Berbers while the plains were the domain of the Arab tribes after 1300 CE.

Another important factor for the history of Moroccan Arabic was the presence of other ethnic groups who stayed in, or passed through, the Moroccan cities. Abun-Nasr (1987:
Emergence and spread of Arabic

5) says: “Whereas Arabs and Berbers, united through Islam, provided the main ethnic and cultural elements of Maghrebi society, it is important to bear in mind that over the centuries the Maghreb has been a melting-pot of many other ethnic groups and cultures.”

For a long time, Andalusian Moslems found their way to the Maghreb. After 1492, Jews fled the anti-Semitic climate in Spain, and in the 16th century everyone who spoke Arabic had to emigrate from Spain. Slaves from south of the Sahara have been taken to the Maghreb since the 9th century. Under the Sa`diyans many mercenaries and about 150,000 slaves from south of the Sahara were drafted into the army. Many traders from other African and European countries have passed through the Moroccan cities. Finally during the age of colonialism there were large numbers of Spaniards and Frenchmen in Morocco. These various forms of contact were not all of the same kind. On the one hand, there seem to have been few Frenchmen who have learned Moroccan Arabic, in contrast with the Berbers. Moroccans, on the other hand, often learned French, while, as far as we know, relatively few native Arabic speakers have learned Berber. These two contact situations correspond to the distinction Thomason and Kaufman (1988) make between borrowing (by Arabs, from French), and language shift (by Berbers, towards Arabic).

Concurrent with these observations is the fact that influences from Berber on Moroccan Arabic are mainly of the language shift type, that is, they consist predominantly of phonological and structural influence and less of lexical influence, in comparison with the influence from Arabic on Berber (cf. Lévy 1998: 21, 1996: 133ff.). In conclusion, in the cities Arabic probably had the role of a trade language, learned and used by many Berbers, and also by many Arab and non-Arab traders. Lévy (1998: 13) says: “Eventually the economic and commercial factor, because of necessary contact with merchants coming from elsewhere, is decisive [for the process of arabisation, WK].”

Probably even before the settlement of Arabs in the Maghreb some changes had taken place in Arabic, since the tribes that conquered the Maghreb in the 8th century, and also the tribes that made up the later Hilal migration did not all come from the same Arabic dialect area (cf. Versteegh 1997: 103). The diversity of origins, and the intense contacts eventually had a levelling influence on the modern language. The urban pre-Hilal dialects evolved from a situation with much language learning and bilingualism among Berber speakers in the northern and central cities. The development of most post-Hilal dialects had the pre-Hilal urban dialects as focus point, and later the dialects of the new cities in the western plains. Today it is difficult to distinguish between features that originate from the city dialects from the first Arab immigration, and the Bedouin dialects from the second immigration (cf. Lévy 1998: 23).

In the northern part of Morocco, in the cities and along the roads into the mountain range stretching towards the east an originally pre-Hilal dialect has been influenced by Berber and by Andalusian and post-Hilal varieties blending into a new dialect, spoken by 17% of the mono-lingual Arabic-speaking population (cf. Laghaout 1995: 24). In the eastern and southern desert parts of Morocco post-Hilal varieties are spoken by 8% of the population. These are rather conservative Hilal varieties, especially the Hassaniya dialect.

51 The actual situation was much more complicated. Berbers who speak Arabic also ‘borrow’ from their first language, while Arabs who speak Arabic may also transfer structures from their knowledge of French structures.

52 “Le facteur économique et commercial, en raison du contact nécessaire avec des négociants venus d’ailleurs, est finalement décisif.”
spoken in Mauritania. The largest part of the Arabic-speaking population, 75%, speak the
dialect levelling on the Atlantic plains. This is the variety that I use in my description
below. It is probably not the variety that has undergone most language contact but it has
been best described.

In addition to the influence of language contact and dialect levelling on Moroccan
Arabic, the high status of Classical Arabic has often been adduced as a force that has had
consequences for the development of Moroccan Arabic (Marçais 1961: 179ff.). The
exact role of Classical Arabic in the development of Moroccan Arabic and other Arabic
varieties is unclear. Some authors (e.g. Versteegh 1984, 30ff.) claim that Classical Arabic
was the model towards which the initially pidginised Arabic varieties converged. Other
authors (cf. Diem 1978) assume a gradual slow change away from the Classical language
during which the Arabic varieties would converge into a common direction, but
independent from the Classical norm. In 4.6 I discuss further evidence for these two
scenarios.

There is no evidence that colloquial Moroccan Arabic, as different from Classical
Arabic, has had any prestige in the past millennium. The only form of language considered
to have high value was Classical Arabic. Nevertheless, it could be that Moroccan Arabic
had somewhat more prestige than e.g. Berber languages, since Moroccan Arabic was at
least more related to the Classical language and Islamic culture than Berber languages
(cf. Diem 1978: 145). This could explain its dominance in Morocco over Berber.
However, this can also be due to the status of Arabic as the most important trade
language in North and West Africa. In addition, it is also feasible that Moroccan Arabic
has had some covert prestige (cf. Trudgill 1972). While officially the Classical language
was most important, Moroccan Arabic may have played a role as an expression of
solidarity.

Today Morocco is culturally and linguistically independent (cf. Abun-Nasr 1987: 101,
214). As a political and cultural entity Morocco has been shaped by its specific history;
it geography; the composition of its population; its own school of religious leaders; its
stress on Islamic saints and sufi’s, and its interaction with neighbouring countries.
Moroccan Arabic has however never been used as a symbol of this national identity.
Language policy in the Arab world implies cultivation of the Classical language, and
stressing the pan-Arab identity. On an everyday level the feeling of being a Moroccan
may correlate a little with selecting Arabic features different from other Arabic varieties.
Still, there are no signs that Moroccan identity leans strongly on a diverging trend in its
speech. In fact, ethnic borders hardly correspond to isoglosses among dialects in the
Maghreb.

In conclusion, with respect to the social parameters of 2.2 and 2.3, the situation in
Morocco has been as follows:

- The first Arab settlers, who came to Morocco in the 9th century, became city dwellers,
in contrast to most of the earlier speakers of Arabic.
- In the centuries immediately following the Islamic expansion the majority of speakers
  of Arabic were Berber in origin, and the Arab speakers had different dialect
  backgrounds.
In the cities there have always been lots of contacts with speakers of other languages, especially with Berber, French and Spanish. This happened mainly in a context of trade.

In a substantial amount of these contacts Arabic was the language of communication, and furthermore many Berbers shifted to Arabic.

In addition to the vernacular a Classical high-culture language remained. This prestige variety has had some influence on the development of Moroccan Arabic as well.

Moroccan Arabic has had a very low status in comparison to the Classical language, French and Spanish. However, it is not impossible that it had more prestige than surrounding languages due to its belonging to the same cultural realm as the Classical language.

Although Morocco has a national identity different from surrounding countries, this identity is not actively supported by a particular language variety.

4.1.3.4 Nubi

The Nubi speech community originates from southern Sudan and was subsequently shaped in Uganda. Nubi has often been considered as a creole language.

In studies of creole languages (cf. Arends et al. 1995) three perspectives are discernible. The emergence and development of a creole can be considered from the perspective of the substrate languages, the superstrate language, or universal processes. From the first viewpoint the differences between a creole and its lexifier are stressed, and correspondences between the creole languages and the native languages of the oldest speakers of the creole are examined (cf. Boretzky 1988). Adherents of the superstrate perspective stress the continuity between the lexifier language and the creole, and extend methods of dialectology to creole research (cf. Owens 1991). Universalists examine aspects that set off creole languages from both the lexifier and the substrate languages. These aspects are either of a cognitive-linguistic, or a sociolinguistic nature, or both (cf. Owens 1997). In this study I adopt the superstrate and the universalist perspective. My universalist view implies that creolisation is the most radical example of a general kind of language change under particular social circumstances. My superstrate perspective means that I examine the consequences of this radical change for the morphological substance of the superstrate language. Therefore, although Nubi may have non-Arabic structures retained from a substrate language, I will focus on the morphology of Nubi from the perspective of Arabic.

Background

The Arabic expansion in Africa initially left the lands south of the Sahara untouched. In the region south of Egypt, presently called Sudan, southward expansion was blocked by strong states, like the Christian Nubian empire, and by difficult lines of communication (cf. Holt & Daly 1961: 15ff.). However, individual traders from the cities in the west of the Arabian Peninsula (cf. Figure 4.2) came to Sudan even before the rise of the Islam. These Arabs mixed with the east-African population and they were a factor in the early Islamisation and Arabisation of Sudan (Prokosch 1986: 31). In the 14th century the Nubian kingdom had weakened, and from then on the influence of the Arabic speaking
Islamic north slowly extended southwards. In the 16th century the Islamic Funj kingdom was established in large parts of Sudan. By that time Arabic probably already served as a trade language for large parts of the region (cf. Owens 1997: 127). In the early 19th century the Funj kingdom fell, and at the same time Egypt started to expand further southwards. Egypt was motivated to secure the slave and ivory trade, and to find the fabled gold-mines (cf. Holt & Daly 1961: 47ff.).

In the first half of the 19th century Egypt succeeded in conquering the northern half of Sudan. In the southern part, however, independent traders in slaves and ivory of Arab and European origins came to control the area. These merchants established settlements, which grew out into camps with sometimes more than 10,000 inhabitants. By that time pidginised forms of Arabic probably already served as lingua franca in the Egyptian army and in commercial contacts inside and outside the trade settlements (Wellens 2003: 10; Hill 1959: 85). From this lingua franca, as spoken in the southern camps, a variety arose, which would later become Nubi. The name “Nubi” may have been based on the high number of traders and officials who came from Nubia, that is, the arabised region in the north of modern Sudan (cf. Wellens 2003: 24). In the 1870s the Egyptian government wanted to expand further southwards (cf. Holt & Daly 1961: 74ff.). With the help of European and Arab military leaders, and with predominantly local slave-soldiers, the Egyptians gained control over the banks of the Nile river and the settlements on it. This led to resistance on the part of the traders. Several efforts by the traders to resist this Egyptian policy followed, and the upsurge of the Mahdist movement finally broke Egyptian control over Sudan in 1882. The Mahdist victory cut off the lines of communication and supply between the settlements in the south and Egypt. The German leader, Emin Pasha, eventually abandoned the settlements that fell under his command and moved southwards with a large part of the population of the settlements along the Nile. During this journey many higher officials and finally also Emin Pasha himself left the troop of soldiers and slaves and they were replaced by former lower officials. From 1888 to 1891 the troops were left in isolation near the Sudan border with Uganda, until they were ‘discovered’ by the British who were then in need of troops to control Uganda. There were about 10,000 Nubi at that time (Wellens 2003: 21). These were subsequently invited to Uganda to serve as a mercenary army.

Since they had no land in Uganda, and because they were former mercenaries, the Nubi always occupied a special position in Uganda society. During their first decades in Uganda they were regarded as welcome mercenaries for the army. For that purpose they were stationed in the town of Bombo where the army headquarters were situated. They enjoyed special privileges, and a partly autonomous status. In the 1920s, however, fewer Nubi joined the army, and they were replaced by members of local ethnic groups. This loosened the link between Nubi ethnicity and military identity, which became further separated after the army headquarters were moved from Bombo. Subsequently, their special status in society was questioned, and several proposals were made to assimilate them into Ugandan society. These were mostly unsuccessful, and the Nubi remained a separate group. They held a rather conservative attitude that prevented them from taking advantage of modern education, which in their opinion was against the teaching of the Qur’an. Socio-economically they entered the lower end of the spectrum (Wellens 2003: 22). In the 1970s things changed in Uganda, when Idi Amin seized power. The new ideology was both nationalistic, militaristic, and Islamic, and the Nubi found a new niche.
in the society, led by the muslim Idi Amin. After Amin’s expulsion in 1979 many Nubi were accused of collaboration with Idi Amin and were expelled from Uganda. In the late 1980s many of them returned to their country.

The early history had important consequences for the sociolinguistic situation of the Nubi speakers, their network structure, and their language attitudes. I will first discuss the period of the south Sudanese camps, and then the period of the Nubi community in Uganda.

**Nubi language contact and network structure in south Sudan**

Nubi has its origins in the pidgin Arabic, spoken during the second half of the 19th century in the south Sudanese settlements along the Nile.\(^53\) Owens (1997: 139) estimates that the total population of the camps in the southern Sudan was about 60,000, while the rest of the population in the region numbered 190,000. The ethnic groups outside the camps spoke several Nilo-Saharan and Niger-Congo languages, like Zande, Bari, Dinka, Mamvu and Lumbara. These languages are not mutually understandable. The speakers of Arabic in the settlements were traders from western Sudan, and officers and soldiers both from Egypt and from the Maghreb. It is disputed what kind of Arabic was the basis for the pidgin that arose in the camps. According to Heine (1982) it would be a form of Egyptian Arabic, as spoken by the officials from the north, while Owens (1985) argues that western Sudanic Arabic as spoken by the traders was more important. According to Wellens (2003: 25ff., 206ff.) various pidgin and non-pidgin Arabic varieties must have been involved in the Nubi formation process that spanned several decades. Most aspects in which the non-pidgin varieties differ from each other, however, lie outside inflectional morphology and are largely irrelevant to this study.

In the first years of the settlements the proportion of native Arabic speakers was higher, while later the number of slaves and soldiers from the local non-Arab population increased. In 1870, sixteen years after the first camps were established, the percentage of Arabic speakers was estimated to have been between 15 and 25% (Owens 1997: 138). The percentage of native Arabic speakers who ended up in Uganda must have been even lower. On the basis of a census from the German administration in Tanganyika in 1898, Owens (1997) estimates the number of Arabs to be at most 4.5%. This raises two questions: first, why did a form of Arabic become the language of later generations, and second, why was Arabic so thoroughly modified? An answer to the first question is that the speakers of the several local languages did not have any language in common. Local languages were used for intra-group communication. However, a common inter-group language was needed since there were many contacts between members of different ethnic groups, e.g., soldiers took local slaves. Since Arabic was the dominant language and was needed in contact with officials a pidginised form of Arabic became the language of inter-group communication. The answer to the second question lies in the combination of restricted access to Arabic, imperfect learning, and levelling between the several kinds of Arabic spoken. Second language learners of Arabic overwhelmingly outnumbered native speakers.

The relations between the inhabitants of the camps and the local population were bad (Owens 1997: 129). The latter suffered from raids and risked becoming slaves in the

\(^{53}\) However, according to Versteegh (pers.comm.) there is also some evidence that Nubi originates from training camps in the Aswan region (cf. Wellens 2003: 35).
camps. Within the camps there were also several groups. A three-way division can be made between the northern officers, the southern soldiers, and the local slaves (Owens 1997: 143). Local slaves could become members of the soldier group. This did not lead, however, to any solidarity between these two latter groups. The soldier group, in its turn, was looked down upon by the northerners. In addition, soldiers grouped according to their descent. When their origin no longer was a source of distinction, they remained a group of their own. Hansen (1991: 562) says: “The strength of their consciousness as a separate social entity was borne up by the hardships that these military communities sustained for almost a decade.” According to Owens (1997: 144) the emergence of class consciousness among the camp’s inhabitants resulted in the stabilisation of the pidginised forms of Arabic. If so, then this pidgin must have had some status, and apart from being a means of communication, it must have been a symbol of group membership as well. This is plausible since a pidginised form of Arabic may have expressed both Islamic and Arab values and a military way of conduct that distinguished the soldiers from their ethnic origins, as well as their distinctiveness from the higher officials and traders, by its particular pidginised form.

**Nubi language contact and network structure in Uganda**

When the soldiers and their slaves migrated to Uganda, many northerners left. This led to a further separation of pidgin Arabic from its lexifier, colloquial Arabic. The separation was, however, never complete. There have always remained contacts between speakers of Nubi, and native Arabic speakers (Wellens 2003: 29ff.). When children grew up in this environment, they learned pidgin Arabic as their mother tongue, which accelerated the process of nativisation and creolisation of pidgin Arabic. The whole trajectory from a variable pidginised Arabic through a stable pidgin to a nativised creole must have taken several decades (Wellens 2003: 33ff.), as is usual for creoles. The new creole language, Nubi, would become the language of the next generations in the Nubi speech community. At the same time, a steady stream of non-native Nubi speakers was absorbed into the Nubi speech community. In the first years after their migration from southern Sudan the Nubi continued to raid for women and slaves. This implies that there remained a rather high percentage of second language speakers among them. Another kind of second language speakers were those attracted by the status of the Nubi as soldiers in Uganda, and their relatively comfortable position in society. The number of newly ‘nubianised’ members of the Nubi speech community must have been considerable, since ‘nubianisation’ was treated as a problem when the British government tried to regulate the position of the Nubi in society and to determine the number of ‘real’ Nubi (cf. Hansen 1991: 570ff.). Finally the Nubi language is also used as a language of communication by non-nubianised speakers in the north of Uganda, which is understandable because of the proximity of southern Sudan, where pidginised and creolised varieties of Arabic function as lingua franca’s (cf. Wellens 2003: 34; Owens 1997: 135).

Apart from the relatively large group of second language speakers of Nubi, many Nubi proper have always been bi- or multilingual. The languages they speak vary from English to Swahili, Luganda, Luo and Lugbara, depending on place of residence and social activities. While the Nubi were cut off from access to Arabic when they had just migrated to Uganda, today there is contact with other forms of Arabic, e.g., through education in Arab countries. There is no decreolisation, however, since Nubi speakers are proud of
Emergence and spread of Arabic

The Nubi speech community consisted of about 10,000 immigrants at the end of the 19th century. Today it is not so clear who should count as a Nubi, and the estimates of the number of Nubi in Uganda varies between 10,000 and 15,000, while a similar number is claimed for the Kenyan Nubi speakers. After their arrival in Uganda the Nubi have not always lived in the same region. Periodically they served as soldiers, and after Idi Amin’s regime many fled abroad. However, they have always formed a quite distinct group in Ugandan society. They often live in separate areas in the larger towns, and most of them still live in the former military centre, Bombo. They differ from other groups in Ugandan society because they cannot claim a common geographical or ethnic origin. Therefore they do not fit the traditional label of ‘tribe’ or ‘ethnic group’. However, they have a clear tradition, and a common history distinct from other Ugandan groups. Their morals and values are still characterised by their mercenary history, their religion is a pragmatic form of Islam, and, last but not least, they have their own distinct language, of which they are very proud (cf. Wellens 2003: 35). It has a high status and fulfils an important role in expressing Nubi identity. The religious part of this identity, the loyalty to Islam, however, is also expressed by switching to standard Arabic (cf. Hansen 1991: 578). On the other hand, Nubi often disguise their Nubi identity since they are still associated and frowned upon as collaborators with the Amin regime.

Within the Nubi speech community in Uganda, there are no dialects in the traditional sense, although there is some variation depending on the influences of the other languages spoken by the Nubi. In the north vocabulary and phonology is more influenced by Arabic, while southern Nubi is more influenced by Luganda and Swahili. In southern Sudan pidgin Arabic also remained in use in the 20th century. In Juba, one of the larger towns, this pidgin has gained about 80,000 native speakers and may as well be considered a creole, like Nubi. This variety is called Juba Arabic. It is rather similar to Nubi, but recently it has been more influenced by other forms of Arabic present in Sudan (cf. Versteegh 1993: 72). This has resulted in a range of Arabic varieties between pidgin Arabic and standard Arabic. In 4.6 I will discuss the consequences of the proximity of colloquial Arabic on the morphology of these varieties.

4.1.4 Summary and conclusion

When we compare the histories of the three societies, the speech community of Najdi Arabic stands out as the most type 1 like community. It has all type 1 characteristics: the Najdi speakers form several closely knit small groups who have been isolated for centuries. In this region there have been hardly any 2nd language learners and even 2nd dialect learners, and throughout its history Najdi Arabic has had high prestige, both among its speakers itself, as among other speakers of Arabic.

The Moroccan Arabic speech community has more type 2 characteristics. Its language sprang forward from a similar Old Arabic variety as Najdi Arabic, but it settled in a different region with many second language learners, especially in its formative period. In the history of Moroccan Arabic it has always been used as lingua franca between ethnic groups of various descent, especially Berbers. Moroccan Arabic came also in contact with other non-Semitic languages like French and Spanish. Finally, it had far less prestige than Najdi Arabic.
The Nubi community started as a typical type 2 speech community in the military camps in South Sudan. The Nubi speakers had various unrelated languages as their mother tongue and they learned Arabic initially as a non-native language. In the formative period of Nubi its function was mainly as a medium for communication. Only later when the Nubi speech community became a rather distinct group the language gained more prestige. It was learned as a first language, and became used as a symbol of Nubi identity in Uganda.

In Table 4.1 I have summarised what happened in the various Arabic varieties.

**Table 4.1 Social factors distinguishing Arabic speech communities**

<table>
<thead>
<tr>
<th>Source language</th>
<th>Najdi Arabic</th>
<th>Moroccan Arabic</th>
<th>Nubi Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split from the original language since</td>
<td>Arabic</td>
<td>No split</td>
<td>Arabic</td>
</tr>
<tr>
<td>19th century</td>
<td>~800</td>
<td>1954-1888</td>
<td>1954-1888</td>
</tr>
<tr>
<td>Amount of contact between Arabic and other languages</td>
<td>Little</td>
<td>Much</td>
<td>Very much</td>
</tr>
<tr>
<td>Reason of this contact</td>
<td>Little trade and slavery</td>
<td>Migration and trade</td>
<td>Trade, part of the same army, slavery</td>
</tr>
<tr>
<td>Time scale of this contact</td>
<td>800-</td>
<td>800-</td>
<td>1854-1888</td>
</tr>
<tr>
<td>Geographically displaced?</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Kind of learners of the language in question during the contact period</td>
<td>Only a few adults</td>
<td>Children/adults</td>
<td>Adults</td>
</tr>
<tr>
<td>Substrates/ adstrates</td>
<td>No</td>
<td>Mainly Berber</td>
<td>Nilo-Saharan and Niger-Congo languages</td>
</tr>
<tr>
<td>Status of ad/substrate</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Kind of substrate/adstrate</td>
<td>Low</td>
<td>Distantly related</td>
<td>Unrelated</td>
</tr>
<tr>
<td>Influence of second language learners</td>
<td>Hardly any influence</td>
<td>High, especially in the formative period</td>
<td>Very dominant</td>
</tr>
<tr>
<td>Evaluation by the speakers of their own language during the period of change</td>
<td>High prestige, symbol of culture</td>
<td>Low prestige</td>
<td>High prestige, symbol of group consciousness</td>
</tr>
<tr>
<td>Attitudes by the speakers towards other languages during the contact period (openness)</td>
<td>Negative</td>
<td>French and Spanish had high prestige, most other languages perhaps a little less</td>
<td>Positive</td>
</tr>
<tr>
<td>Kind of network structure</td>
<td>Very tight</td>
<td>Loose</td>
<td>Loose</td>
</tr>
</tbody>
</table>

54 This label may seem artificial. However, I have introduced it to indicate roughly how much time has passed since the change has begun.
4.2 Classical Arabic

The data from Classical Arabic presented here are drawn from the following sources: Holes (1995), de Moor (1995), Stoetzer (1997), Versteegh (1997) and Wright (1896). To render Arabic sounds and letters, and to generalise over Arabic verbs, I use the following common conventions (cf. Stoetzer 1997; Versteegh 1997):

- C₁ is the first consonant in the verb.
- v₁ is the first vowel in the verb.
- ^ is a glottal stop (or “hamza”).
- C is a pharyngeal voiced fricative (or “ayn”).
- A dot “·” under a letter as in ‘t’ is used for emphatic consonants.
- Underlining, as in ‘t’ indicates interdental fricativisation.
- A tilde as in ‘s’ is used for pre-palatal fricatives.
- The uvular voiced fricative is written as g.
- The abstract phonological entity, represented in Arabic as an alif, is either omitted, or represented as حلول.

4.2.1 Data

The Arabic verb consists of a skeleton, or root, of usually three consonants, also called radicals. This skeleton can be augmented by affixes and by consonant and vowel lengthening. The meanings of these augmentations are only partly predictable and the augmentations are not fully productive. Although they fall, strictly speaking, under derivational morphology, I will include them here because they are an essential part of the Arabic verb system. The skeletons, possibly augmented, get their flesh from the vocalic aspect and voice infixes, and they are further dressed up by prefixes and suffixes that signal person, gender, number, and mood. Finally object pronominal clitics may be attached verb-finally. For instance, the skeleton 'CLM means 'know', and the augmented -causative- skeleton 'CLLM' means 'teach'. Imperfect aspect and active voice insertions render u-callim. PGN affixation gives e.g. t-u-Callim-i: 'you (2SG.FEM) teach', and the indicative mood suffix and object pronominal clitic render the complete form: t-u-Callim-i:-na-huma: 'you (FEM.SG) taught them (3MASC.DUAL)'.

Changes took place in Arabic throughout its morphological system, and therefore each separate component will now be studied in more detail. I will investigate the augmentation system, the vocalic aspect/voice system, the PGN-system, the mood system, and the object clitics. After the general outline I will discuss the variations on this major conjugation type, leaving out negation, and indirect object clitics.

4.2.1.1 Augmentations

The augmentations of the root yield ten frequently used ‘verbal morphosemantic patterns’ (Holes 1995: 82ff.), or ‘derived forms’ (Wright 1896: 29ff.), and five patterns

---

55 In modern linguistics there is a tradition to abstract away from different morphological patterns. For instance MacCarthy (1982) tries to account for the augmentation pattern and vocalic voice and aspect pattern by adopting an ‘auto-segmental’ analysis in which he does not need to distinguish between infixes and other affixes.

56 I put the skeletons and the augmented skeletons in capitals in italics. I put Arabic forms with voice and aspect infixes, and forms dressed up with PGN affixes in plain italics.
that are less used (Wright 1896: 29). The first unaugmented basic pattern, \( C_1C_2C_3 \), is more common in Modern Standard Arabic. Holes says (1995: 82): “Of the 474 commonest verbs which occurred in the corpus [a large corpus of literary, journalistic, documentary and school texts. WK] twenty times or more, 224, or just under half, were pattern 1, with the other nine common patterns (plus quadrilaterals) accounting for the remaining 250 between them.” In Table 4.2 I display the augmentations and the aspect and voice infixes. The numerals refer to the augmented patterns. The active and the passive vocalic orders must be inserted in the patterns that follow. I discuss these derivations below, and the aspect and voice infixes in the next section.

Table 4.2 Classical Arabic augmentation patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Imperfect</th>
<th>Perfect</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>passive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>vCtvCvC</td>
<td>nCtvCvC</td>
</tr>
<tr>
<td>8</td>
<td>vCtvCvC</td>
<td>CtvCvC</td>
</tr>
<tr>
<td>9</td>
<td>vCtvCvC</td>
<td>CtvCvC</td>
</tr>
<tr>
<td>10</td>
<td>vCtvCvC</td>
<td>stvCvC</td>
</tr>
<tr>
<td>active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>passive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>vCtvCvC</td>
<td>CvCvC</td>
</tr>
<tr>
<td>3</td>
<td>vCtvCvC</td>
<td>CvCvC</td>
</tr>
<tr>
<td>4</td>
<td>vCtvCvC</td>
<td>vCvCvC</td>
</tr>
</tbody>
</table>

Pattern 2 is formed by doubling the second consonant of the basic form: \( C_1C_2C_3 \). It adds the meaning of ‘intensivity’, in action, time, or people involved: \( QT, ‘kill’ \) \( \rightarrow \) \( QTTL, ‘massacre’ \). It may also have a causative or factitive meaning, as the example involving ‘teach’ in the introduction above shows.

Pattern 3 is formed by lengthening \( v_1 \) of the basic form: \( C_1v_1:C_2C_3 \). A sense of reciprocity is always implied, and sometimes pattern 3 refers to the attempt to perform an act, instead of to the performance itself: \( QT, ‘he killed him’ \) \( \rightarrow \) \( QTTL, ‘he tried to kill him, he fought with him’ \). It also can convert a verb taking an indirect object into one taking a direct object (Wright 1896: 33).

In pattern 4 a glottal stop is prefixed, which affects the vocalism of the aspect/voice system by preventing the vowel after \( C_1 \) in the perfect from appearing (see below). The skeleton in the imperfect reduces to \( vCvCvC \), for instance, \( ^5LM ‘know’ \) \( \rightarrow ^\lambda LM ‘inform’ \) \( \rightarrow yu^\lambda a^\lambda limu \) \( \rightarrow yu^\lambda limu ‘he informed’. Its meaning is causative, active or transitive, and it induces an extra actor in the event.
Pattern 5 adds a \( t \)-prefix to pattern 2 verbs: \( C_1C_2C_3 \rightarrow tC_1C_2C_3 \). It usually expresses the state into which the object of the action denoted by the second form is brought. Its meaning is often passive,\(^{57}\) reflexive, or effective. For example, \( KSR \) ‘break’(trans) \( \rightarrow \) \( KSSR \) ‘break into pieces’ \( \rightarrow \) takassara ‘it was broken/broke in pieces’, and, \( ^CLLM \) ‘teach’ \( \rightarrow ta\ellama \) ‘he learned, became learned’.

Pattern 6 adds the \( t \)-prefix to third pattern verbs: \( C_1v_1:C_2C_3 \rightarrow tC_1v_1:C_2C_3 \). Its meaning resembles the meaning of pattern 3, but its sense is necessarily reciprocal, and it therefore needs a plural or collective subject: \( Wv:FQ \) ‘agree to’ \( \rightarrow tawa:faqa \) ‘(a group) reached an agreement’.

Pattern 7 adds the \( n \)-prefix to the basic pattern, and adds a reflexive or middle meaning. \( KSR \) ‘break (trans)’ \( \rightarrow nKSR \) ‘break (intrans)’. When no prefixed vowels precede this prefix a prosthetic glottal stop and ‘\( i \)’-vowel are prefixed before the \( n\)-.

Pattern 8 inserts ‘\( t \)-after the \( C_1 \) of the basic pattern, \( C_1tC_2C_3 \). When there are no further prefixes, prosthetic ‘\( i \)’ is prefixed. Its meaning is rather close to the meaning of pattern 5 and 6, and especially pattern 7, and expresses a reflexive, middle or passive sense: \( ^JMC \) ‘collect’ \( \rightarrow ^i\jamaCu: \) ‘they assembled together’.

Pattern 9 doubles the third consonant of the basic pattern: \( C_1C_2C_3C_3 \). It is uncommon, because it only denotes colours and physical defects. The first vowel is weakened and a prosthetic vowel is prefixed, resulting in, e.g. \( ^H\)MR ‘red’ \( \rightarrow ^i\hmarra \) ‘he blushed’.

Pattern 10 is formed by prefixing ‘\( st \)’, and a prosthetic vowel, to the basic pattern. Its meaning is the reflexive, middle or benefactive denotation of the meaning of the fourth pattern of the root. \( ^CCLM \) ‘know’ \( \rightarrow ^c\jamaCu: \) ‘inform’, \( \rightarrow sta\ellama \) ‘he got information for himself’.

Pattern 11 is derived from pattern 9 by lengthening the vowel of the second consonant: \( C_1C_2v:C_3C_3 \). Its meaning resembles that of pattern 9, but is more transitory.

The other three patterns are very infrequent.

In addition to patterns derived from tri-radical roots, there are also several kinds of quadriliteral verbs (cf. Wright 1896: 47ff.), that is, reduplicated bilateral onomatopoeic verbs, verbs derived by an unproductive affixation of a fricative to a triconsonantal verb, denominatives based on nouns with more than three consonants, and idiomatised formulas. Their augmentations mirror the augmentations of the tri-consonantal roots.

There are three kinds of augmentations possible: patterns 2, 3, and 4, which correspond to pattern 5, 7, and 9 of the tri-consonantal roots.

4.2.1.2 Aspect and voice

Voice is expressed by the choice of the vowels that fill the consonantal skeleton. Aspect is also expressed by this vowel choice but, furthermore by a specific skeleton structure, traditionally described as rendering two stems. These two stems each trigger a particular set of PGN affixes. I will call the two stems the imperfect and the perfect stem (cf. Stoetzer 1997: 82; Versteegh 1997: 84; Wright 1896: 51, and for further discussion also

\(^{57}\) This passive differs from the ‘internal’ passive, discussed below, because an agent cannot be implied in this form.
Arabic

Comrie 1976).\(^{58}\) The skeleton of the imperfect in the basic pattern is \(v_1CCv_2C\), and the skeleton of the perfect is \(Cv_1Cv_2C\). In Table 4.3 I have depicted the possible vowel distributions of pattern 1. In this pattern \(v_1\) remains the same in the perfect and imperfect stem. The relation between the \(v_2\) of the imperfect and perfect stem is biunique in the passive voice, while the relation between the \(v_2\) in the active voice shows some phonological variation, but is also dependent on lexical and semantic properties of the verb (cf. 4.2.1.6, and Wright 1896: 57ff.). For example, the imperfect \(AKTLIB\) ‘read’ has as perfect counterpart \(KATAB\), while \(AQSUR\) ‘become short’ has \(QASUR\).

### Table 4.3 Classical Arabic vowel patterns

<table>
<thead>
<tr>
<th></th>
<th>active</th>
<th>passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>imperfect</td>
<td>(v_1CCv_2C)</td>
<td>(Cv_1Cv_2C)</td>
</tr>
<tr>
<td>v_1</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>v_2</td>
<td>a</td>
<td>i</td>
</tr>
</tbody>
</table>

The many-to-many relations between the \(v_2\) vowels in the active voice imply that the forms of the two stems are not linked to each other in a predictable pattern in all cases. In the augmented patterns the two stems, however, are strictly mutually determined, and have no lexical or morphological allomorphy.

The vowel patterns of the augmented patterns for the perfect stem are (a)-a-a, and (u)-u-i in the active respectively passive voice, where the brackets refer to the extra vowel in patterns 5 and 6 in which a vowel is demanded by the consonantal prefix. In the passive voice of the imperfect stem the vowel pattern is u-a-(a)-(a), as in the basic pattern, the number of vowels depending on the kind of modifications of the pattern.\(^{59}\) The vowel distributions of the active voice of the imperfect stem are only partly predictable from the basic pattern (cf. Table 4.2, and Holes 1995: 88; McCarthy 1982; Wright 1896: 63ff.).

### 4.2.1.3 Person, gender and number

#### Table 4.4 Classical Arabic Perfect inflection

<table>
<thead>
<tr>
<th></th>
<th>sing</th>
<th>plur</th>
<th>dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>–tu</td>
<td>–na:</td>
<td>–</td>
</tr>
<tr>
<td>2m</td>
<td>–ta</td>
<td>–tum</td>
<td>–tuma:</td>
</tr>
<tr>
<td>2f</td>
<td>–ti</td>
<td>–tunna</td>
<td>–tuma:</td>
</tr>
<tr>
<td>3m</td>
<td>–a</td>
<td>–u:</td>
<td>–a:</td>
</tr>
<tr>
<td>3f</td>
<td>–at</td>
<td>–na</td>
<td>–ata:</td>
</tr>
</tbody>
</table>

\(^{58}\) Holes (1995: 86) calls the imperfect stem the p-stem (prefixal) and the perfect stem the s-stem (suffixal).

\(^{59}\) I prefer such an analysis above the analysis of Stoetzer (1997: 91), where the first vowel of the imperfect passive is considered as part of the PGN allomorphy. In such an analysis, an extra set of PGN prefixes has to be assumed, the choice of which depends on voice. Under that analysis the resemblance of these prefixes to the other imperfect active prefixes remains unexplained. Furthermore, the relation between the vowel patterns of the imperfect and perfect passives is obscured.
Classical Arabic

Table 4.5 Classical Arabic Imperfect inflection
Affixes that only appear in the indicative are in brackets (see below).

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>sing</th>
<th>plur</th>
<th>dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>^-</td>
<td>1</td>
<td>n-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>t-</td>
<td>2</td>
<td>t-</td>
<td>t-</td>
<td>t-</td>
</tr>
<tr>
<td>t-...i:(na)</td>
<td>3m</td>
<td>t-...-u:(na)</td>
<td>t-...-a:(ni)</td>
<td>t-...-a:(ni)</td>
</tr>
<tr>
<td>t-...(-u)</td>
<td>3f</td>
<td>t-...-u:na</td>
<td>t-...-a:ni</td>
<td>t-...-a:ni</td>
</tr>
</tbody>
</table>

There are two sets of PGN affixes. These express first, second and third person; masculine and feminine; and, singular, dual, and plural. This could yield 36 different affixes; however, several syncretisms reduce the number of affix combinations to 25:

The PGN denotation in the imperfect stem consists of a prefix and a suffix. This could be analysed as a circumfix. However, the components of this circumfix seem to mean something on their own as well, e.g., -a: is only used for the dual, and y- only for the 3rd person. On the other hand, an analysis in which the prefix and suffix have a mutually independent meaning misses several generalisations (cf. Noyer 1992: 61ff.). This problem can be analysed in the framework of distributional morphology by assuming a fused PGN-meaning, which then is realised in two affixes. By accepting an intermediate level where the person, gender and number meanings are fused and a subsequent level where they are fissioned again, the partial dependency between prefix and suffix is accounted for without using theoretically unattractive circumfixes. The fission of the fused PGN-meaning into exactly two parts is motivated by a templatic demand on morphological structure, which for the imperfect in Classical Arabic is, PRE-STEM-SUFF. Of course, the costs for this analysis lie in the extra morphological level; however, with such a level generalisations are made for Arabic, for other Afro-Asiatic languages, and for other morphologically complex languages like Nunggubuyu (Noyer 1992). The counterpart of this autonomous morphological level in my model is the Morphological Principle. The affixes of the imperfect stem can be specified as in Table 4.6 (the affixes of the perfect also have straightforward specifications, which I will not discuss here).

Table 4.6 Classical Arabic affixes of the imperfect

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>^-</td>
<td>1</td>
</tr>
<tr>
<td>n-</td>
<td>1, plur</td>
</tr>
<tr>
<td>t-</td>
<td>2</td>
</tr>
<tr>
<td>t-...i:(na)</td>
<td>dual</td>
</tr>
<tr>
<td>t-...(-u)</td>
<td>fem, plur</td>
</tr>
<tr>
<td>t-...u:na</td>
<td>plur</td>
</tr>
<tr>
<td>t-...i:na</td>
<td>fem/-2</td>
</tr>
<tr>
<td>t-</td>
<td>fem</td>
</tr>
<tr>
<td>y</td>
<td>ø</td>
</tr>
<tr>
<td>-u</td>
<td>Elsewhere/_ind</td>
</tr>
</tbody>
</table>

To infer the correct form from a given meaning, in addition, a markedness hierarchy, the Panini Principle, and autonomous structure constraints are needed. In the markedness hierarchy number ranks higher than person, which on its turn ranks higher than gender
Noyer (1992: 93) formulates the Hierarchy Constraint and Panini Principle as follows:

- **Hierarchy Constraint**: If structural descriptions are disjoint or overlapping, then the rule referring to the hierarchically higher feature applies first.
- **Panini Principle**: If one rule’s structural description is contained in the other’s, the rule with the more specific structural description applies first. (Noyer 1992: 93).

With the help of these general principles derivations are prevented like: \( t=\text{FEM} + \text{ROOT} + -u:na=\text{PL} \rightarrow \text{2FEM.PL} \), because in this derivation the Hierarchy Constraint is violated. Prefixation of \( t=2 \) is preferred since person is higher than gender on the hierarchy, yielding the correct form, \( t=2 + \text{ROOT} + -na=\text{FEM.PL} \) for \( \text{2FEM.PL} \). By the second constraint, \( t=\text{FEM} + \text{ROOT} + -u:na=\text{PL} \) is prevented to mean \( 3\text{FEM.PL} \). Instead, \( y=0 + \text{ROOT} + -na=\text{FEM.PL} \) is preferred.

### 4.2.1.4 Mood

The perfect stem has no further mood distinctions, while in imperfect finite forms three moods are distinguished, the indicative, subjunctive and jussive. Because the labels for the mood suffixes do not coincide completely with their sense in European languages, Holes prefers to call the suffixes \( u \)-set, \( a \)-set and base-set suffixes respectively. The \( u \)-set, used for the indicative, consists of the affixes between brackets in above, and of an \( -u \) after the suffixless forms. The \( a \)-set, for the subjunctive, consists of the \( -a \) after the suffixless forms. The jussive corresponds to the forms in Table 4.5 without the bracketed affixes. Examples are: ‘she/they (f, dual)/they (f, plur) write’: \( \text{taktub}/ \text{yaktubna}/ \text{taktuba:ni} \), ‘she/they (f, dual)/they (f, plur) did not write’: \( (\text{lam}) \text{tak} \text{tub}/ \text{yaktubna}/ \text{taktuba:} \), ‘that she/they (f, dual)/they (f, plur) write’: \( \text{taktub}/ \text{yaktubna}/ \text{taktuba:} \).

In an alternative analysis, Noyer (1992: 94ff.) assumes there is a set of affix specifications for the three moods, and, in addition, there is a prosodic word structure constraint, which leads to the truncation in the non-indicative forms. Most mood distinctions, as well as several PGN distinctions are signalled only by a final short vowel. These are the forms and distinctions which were subject to the discussions referred to in section 4.1.2.

### 4.2.1.5 Object clitics

The object pronouns in their bound form, strictly speaking, do not belong to inflectional morphology. Since this system of clitics has also changed in interesting ways I will nevertheless discuss it here. After the full inflectional forms in Classical Arabic the following bound pronominal forms can be placed. These clitics, or suffixes, except for 1SG, are the same as the genitive pronouns. Examples are: ‘I beat you (fem, plur), him, them (dual)’: \( \text{darabraktu} \text{kunna, darabr} \text{tu} \text{hu, darabr} \text{tu} \text{ha:} \).

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60 In Classical Arabic there were two other moods, the imperative and the ‘energetic’ (Wright 1896: 51). These are not used in finite tenses, however.
4.2.1.6 Stem classes

The augmentations, the vowel insertions and affixations all involve a consonantal skeleton. Generally verb formation follows the steps above. However, some consonant combinations cause deviations from this format. Verbs with the same consonant in the second and third position often have no vowel after the second consonant if the first and third consonant are also followed by a vowel, e.g. *farara* → ‘he fled’. If the first consonant is not followed by a vowel, the vowel of the second consonant changes its place: *yamlalu* → ‘he got bored’. This takes place especially in verbs with a second vowel *a* in the perfect stem. When a consonant-initial suffix follows, and when the second consonant is alveolar this consonant is sometimes dropped, and sometimes its vowel is placed after the third radical. In the apocopated jussive forms, an epenthetic vowel is inserted at the end, and the second vowel is deleted instead. In the augmented forms where the second or third consonant is already doubled such contractions and metatheses do not take place. These are not merely phonological rules, since they are sensitive to the morphological environment (cf. Holes 1995: 95).

Another class of exceptions are the so-called weak verbs. These have a consonantal counterpart of one of the three vowels *a*, *i*, and *u* among their radicals, that is, they are analysed as having either an *w*, *y*, or *w* in one or more positions in the skeleton.\(^{61}\) The underlying glides, *w* and *y* sometimes surface as *w* and *y*. However, the alif, *|*, never surfaces as a distinct sound, and is only hypothesised as an abstract phonological entity to account for the patterns more succinctly. If the first consonant is a *w*, it is dropped in the imperfect when the v2 is *i*. Some *w*-initial verbs with v2=*i* in the perfect also delete the *w* in the active imperfect, because their v2 is, contrary to Table 4.3 also *i*. A few verbs with v2=*=a* also delete the initial *w*. When the verb has a prefix with an *i* or *u* vowel, initial consonantal *w* and also *y* assimilate to the preceding vowel, and are realised as vowels themselves. In pattern 8 the initial *w* and *y* assimilate to the following *t*.

If C2 or C3 is weak, several morphologically conditioned phonological adjustments take place. I have summarised these in Table 4.8, adapted from Holes (1995: 92ff.).\(^{62}\)

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\(^{61}\) Another analysis is possible. Fleisch, discussed in Holes (1995: 91), argues that the initial *w* and *y* are formed from biradical roots by analogy to the ‘real’ triradical verbs. In this view, the initial *w* has not historically been dropped, but has simply never evolved. This does not exclude the synchronic analysis however, in which the underlying form has a *w* or *y* initially.

\(^{62}\) However, even this extensive table is not complete. There are several examples of verbs behaving differently. Cf. *qawamta* → *qumta* (Versteegh, pers.comm.).
Long vowels are the outcome of many of these processes. These shorten when the weak consonant is in second position, and the syllable following that consonant is closed. When two of the radicals are weak, further combinations of assimilations take place (cf. Wright 1896: 94ff.). These rules allow several exceptions in verbs with similar phonological conditions. Furthermore the rules are sensitive to the nominal or verbal status of a word (cf. Holes 1995: 91-94; Wright 1896: 81-91). Therefore, although the rules are clearly phonologically motivated, e.g., the hierarchy a>i>u plays an important role in the processes-, they belong to morphology.

In addition to the character of the radical consonants, verb classes also arise because of the different ways $v_2$ behaves in the active imperfect and perfect stems of pattern 1 (cf. Table 4.3 above). Five alternations are possible: (imp-perf.) a-a, a-i, i-a, u-a, u-u, although there is some regularity as well. The a-a alternation is a phonological variant on the i-a pattern, while u-a is a deviant minority pattern (Versteegh, pers.comm.). Moreover, the choice between $v_2$ vowels of the perfect is partly semantically motivated. A $v_2$ vowel, a, is generally used in transitive verbs, like fa‘al, ‘make’ and darab, ‘hit’. An i is generally used for actions in which the agent is involved or affected, like hasir, ‘lose’, fahim, ‘understand’ and an u is used in intransitives that denote states and qualities like hasun, ‘be good’, kabur, ‘be/become larger’. Although these vowel patterns are to some extent predictable, not all vowel patterns are determined by the consonantal root and the meaning of the verb alone. Therefore, lexical information about a stem must be augmented with information about the pattern the verb uses to mark aspectual distinctions.

### 4.2.2 Analysis

How should we analyse these data within the framework adopted in this study? It turns out that as in all languages I discuss, the Economy and Transparency Principle play a role. It is specific for the case of Arabic, however, that especially fission and the Morphological Principle play a role.
4.2.2.1 Economy

If the object clitics are analyzed as part of the inflectional morphology, the categories expressed in Arabic are aspect, voice, person (subject), gender (subject), number (subject), mood, and person (object), gender (object), number (object). Aspect is always expressed. Voice is expressed in most verbs, although the passive is, for obvious reasons, less expressed in intransitive verbs, like all CvCuC verbs, other intransitive CVCvC verbs, and verbs of pattern 9.63.

Person of the subject is almost always expressed, except in the imperfect feminine dual, which does not distinguish second and third person. Gender of the subject is not expressed in the first person, nor in the second person dual. Number of the subject is always expressed.

Mood is not expressed in the perfect. In the imperfect there are no mood distinctions in forms with short vowel suffixes, that is, 2nd and 3rd feminine plural, and there are no distinctions between subjunctive and jussive in other suffixed forms.

Person of the object is always expressed, gender of the object is not expressed in the first person, and not in the dual. Number of the object is always expressed.

In weak verbs some mood distinctions are lost, e.g., *tabqaya* and *tabqayu* both reduce to *tabqa*. Other distinctions would have been lost in weak verbs, if the rules of Table 4.8 would operate phonologically. However, in several cases where these distinctions would have been lost, other morphological rules interfere (cf. Holes 1995: 93).

Economy would be ranked higher if Classical Arabic would have no short vowel suffixes, as discussed above in 4.1.2. In that case, many other distinctions would not have been made as in the modern varieties, like most mood distinctions and the distinction between 1SG.PERF and 2SG.PERF.

4.2.2.2 Transparency

As extensively argued by Noyer (1992), person, gender and number are fused in Arabic, in the subject as well as in the object, cf. 4.2.1.3. I analyse aspect and voice as not fused. First of all, voice distinctions are only expressed by vowel alternations, while aspect is also expressed by a different placement of these vowels into the skeleton, and aspect triggers also a different set of PGN affixes. Secondly, although the variation in vowel alternation in the active imperfect stem in the augmented patterns is large, voice distinctions can for a large part be distinguished from aspect distinctions. Except in the 5th and 6th pattern, it is the second vowel that changes from *a* to *i*, or from *i* to *a* when changing the aspectual category of a verb. When going from active to passive voice however, it is the first vowel which changes into *u* (cf. also Holes 1995: 88).

Structural homonymy is essentially the reformulation of the Economy Principle in terms of the Transparency Principle, because every filtering of a category combination is at the same time a violation of the No Synergism Principle. Structural homonymy therefore comprises the same forms as mentioned under Economy above. In addition there is so-called accidental homonymy, in which forms are just accidentally the same, without any cancellation of meaning distinctions (cf. section 2.1.2.2 and Carstairs-McCarthy 1987).

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63 The passive in Arabic, however, is a flexible device; also intransitives can in principle be passivised, in the so-called impersonal passive construction.
In Classical Arabic there is only one accidental homonymy in the inflectional paradigm, namely between IMPERF.2SG.MASC and IMPERF.3SG.FEM. When assuming an early final short vowel loss in Classical Arabic, however, homonymy would be more prevalent. As discussed above, fission takes place in the fused PGN category, which is morphologically spelled out into a prefixal and a suffixal position in the imperfect. Other categories show no fission. Another meaning that is not transparently expressed is the lexical meaning of the root itself. The lexical meaning is expressed in the so-called skeleton, which is not a linear unit in the final full verb. Technically this splitting falls under the heading of fission.

The expression of several categories depends on the forms and categories elsewhere. The expression of aspect depends first of all on the lexical root. Weak verbs have, at least on the surface, a different vowel pattern than strong verbs. Furthermore, the various augmented patterns also trigger distinct ways of aspect expression. Finally, aspect is expressed in five patterns in the second vowel, \( v_2 \), of the perfect and imperfect, which is only partly semantically motivated. The PGN affixes, particularly the suffixes are also dependent on the weakness of the root consonants. The form of PGN expression is furthermore dependent on the aspect of the verb. Mood suffices in their turn depend on the form of the PGN suffixes. Mood also depends on the weak/strong distinction in the verb.

### 4.2.2.3 Isomorphy

Aspect and voice is expressed in between the consonants of the lexical root. Person, gender and number of the subject is expressed outside the root, and mood in its turn follows the PGN suffix. Expression of the object of the person is at the end of the verb. So, the order is:

\[(P_{sub}G_{sub}N_{sub}) - [Verb+Aspect+Voice] - G_{sub}N_{sub} - Mood - (P_{obj}G_{obj}N_{obj}).\]

I placed \((P_{sub}G_{sub}N_{sub})\) and \((P_{obj}G_{obj}N_{obj})\) between brackets, because \((P_{sub}G_{sub}N_{sub})\) is only prefixal in the imperfect, and \((P_{obj}G_{obj}N_{obj})\) is only present in certain syntactic environments. For the exact distribution of person, gender and number agreement, see section 4.2.1.3 above.

The ideal order of these categories, according to section 2.1.3.2, is:

Verb - Voice - G_{obj} - N_{obj} - P_{obj} - Aspect - Mood - G_{sub} - N_{sub} - P_{sub}.

The Classical Arabic affix order deviates from this ideal order by having a prefix, and by having a modal suffix farther away from the verb stem than the PGN_{sub} affixes. Finally, the PGN_{obj} suffix is farther away from the stem than the PGN_{sub} affixes.

### 4.2.2.4 Other Principles

In Classical Arabic morphological as well as phonological principles play a role in inflection. Under the heading of Morphological Principles I have included the principles that operate on the morphological structure but which cannot be traced back to the Economy, Transparency or Isomorphy principles, cf. also 2.1.4. The morphological principles operative in Classical Arabic are requirements for certain position and order templates. As discussed above in 4.2.1.3, the choice of aspect triggers a specific skeleton structure, and demands specific affix positions to be filled. These demands are both distinct from syntactic demands like recoverability, and phonological demands, since
they are category sensitive. These demands constitute an autonomous morphological level (cf. also Noyer 1992). This morphological principle is rather stable in the history of Arabic, probably because it contributes to the relative high recognisability of aspect distinctions. In Kinubi Arabic, however, we will see that it has become less important. 

Phonological principles relevant to the history of Arabic are, for instance, the rules that deal with weak consonants, and those that affect verbs where $C_2=C_3$ leads to allomorphy. These rules spring from general principles of phonological markedness, but they are quite specific in Arabic, and sensitive to morphological structure.

4.3 Najdi Arabic

In this section I will discuss the inflection of the verb in the variety of Najdi Arabic spoken by the Shammar tribe. My description is based on Abboud (1979), Ingham (1982, 1994), Johnstone (1967), and Prochazka (1988). I will use the same spelling conventions as in 4.2, with the addition of $c$ and $j$ for palatal, voiceless and voiced, plosives.

4.3.1 Data

As in Classical Arabic, the Najdi verb consists of a root, which can be augmented in several ways. In the augmented skeletons vocalic aspect and voice infixes are inserted, and they are further dressed up by prefixes and suffixes that signal person, gender and number. At the end of these forms object pronominal clitics can be attached. Conjugations vary depending on the consonants of the skeleton. The phonological form is highly influenced by phonological rules.

4.3.1.1 Phonological preliminaries

In Najdi Arabic the phonemic inventory has changed but little from Classical Arabic; the $d$ and $z$ have merged, and the $i$- $u$ distinction is often neutralised, yielding a schwa. On the other hand two new consonants emerged through fronting of $k$ and $g$, that is, $c$ en $j$; and two new vowels emerged as well, $e$ and $o$. These new phonemes behave mainly as allophonic variants, but in some instances they have phonemic status.

In Najdi Arabic there are a few phonological regularities, which are not present in Classical Arabic, and which affect verbal inflection (cf. Ingham 1994: 13ff.). There is a rule that blocks forms with a word-final consonant cluster ending on $r$, $l$, $w$, $y$, or $n$. In such cases a vowel is inserted, for instance $sabr$/$sabr$ ‘my patience’/ ‘patience’. In neighbouring dialects this rule applies in more contexts. The restricted application of this rule is in fact a marker (in the sense of Trudgill 1986) of Najdi Arabic speech. A related rule demands an inserted vowel after a long syllable and preceding a consonant initial suffix, that is, in the context of CvVC+C and CvCC+C. This rule applies especially when the surrounding consonants are voiced, in slow speech, in the northern Najd, and with older speakers and Bedouins. Depending on the order of application, these two rules yield either $ihn$-$ha$ $ibn$-$i$-$ha$, or $ihn$-$ha$ $ibin$-$ha$, ‘her sister’.

In Najdi Arabic some phonological rules involve the vowel quality and affect voice and aspect expression (see below). First of all, there is a rule, the CiC Rule, that says:

64 See note 55.
Arabic

CiCvC# → CCvC#, this rule applies from right to left, yielding ḥibis -at → ḥibs -at, and ḥibis → ḥbis.

Ordered after this rule, there is the CaC Rule, that says:
CaCvCv → CCvCv.

Next, the so-called Short Vowel Raising Rule says:
#Ca# → #Ci#.

These combined rules effectively make an i in an open syllable to be always a derived i.

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CaCvCv → CCvCv.

Next, the so-called Short Vowel Raising Rule says:
#Ca# → #Ci#.

These combined rules effectively make an i in an open syllable to be always a derived i.

Motivations for this ordering are discussed in 4.3.1.3. This ordering explains cases where each rule has applied only once. More complex cases like: katalatan → kiltan cannot be handled by this rule ordering alone. I will not treat these cases, since my focus is on cases where phonology interferes with morphology.

The CaC Rule and the CiC Rule together express the Resyllabification Rule that restricts the occurrence of open syllables (cf. Kurpershoek 1995: 116). Like in Moroccan Arabic, there are more possibilities for sequences of consonants than in Classical Arabic; CC may appear initially and in some instances -CCC- is allowed.

A rule that outweighs the rules above is the Guttural Rule (Abboud 1979: 468ff.), that demands an a in an open syllable, when a velar or post-velar fricative precedes or follows, and also when a voiced continuant /l, n, r, or w/ follows the vowel. The exact conditions vary regionally; in the more central Arabian dialects there are the strictest conditions.

The same velar and post-velar fricatives are also not allowed to appear syllable-finally when preceded by an a. This results in ya-ktib, ‘he writes’, but y-ḥafir, ‘he digs’.

In poetry and rapid speech further assimilation and elision may diminish transparency. Kurpershoek (1999: 128) says: “For someone who is not a native speaker and has not been steeped in this practice, this is yet another factor complicating the instant deciphering of the stream of sound.”

4.3.1.2 Augmentations

The augmentations of the root yield ten kinds of productively derived forms, that correspond to the Classical Arabic augmentations. The patterns 11 until 15 of Classical Arabic are not discussed for Najdi Arabic by Ingham (1994) and Abboud (1979). The patterns are largely the same as in Classical Arabic, but thanks to the phonological rules mentioned above, they differ in the quality of the infixal vowels. The augmentations have only a partly predictable meaning. According to Versteegh (pers.comm.) they differ from the Classical Arabic patterns probably also in degree of productivity. As in Classical Arabic, they are influenced by the Aktionsart of the verb, its lexical meaning, and they display some idiosyncratic properties as well.

Pattern 2 is formed by doubling the second consonant of the basic form: C₁C₂C₃C₄.

Applied to transitive verbs it yields an intensive meaning; applied to intransitives, a transitive meaning, wigaf: ‘he stopped (intr.’), → waggaf, ‘he stopped (tr.’).

Pattern 3 is formed by lengthening the basic form of v₁: C₁v₁C₂C₃. Ingham (1994: 82) argues that in fact the meaning of this pattern is based on that of pattern 6, instead of the other way round. It would be a ‘unidirectional reciprocal’, that is, when pattern 6 expresses reciprocity in e.g. tiṣa: fiḥaw ‘they shook hands with each other’, pattern 3,
Pattern 4 prefixes an ^ before the root, e.g. WGF ‘stop’ (intr.) → ^awgaf, ‘he stopped’. Like pattern 2 the signification of pattern 4 is causative.

Pattern 5 adds a t-prefix to pattern 2 verbs, and a passive or reflexive meaning. For example, GIC ‘cut’ → GIIC ‘cut into pieces’ → tigat ‘it was cut into pieces’.

Pattern 6 adds a t-prefix to third pattern verbs: C1v1;C2C3 → TC1v1;C2C3. Its meaning is reciprocal. FHM ‘understand’ → tifa:himaw ‘they mutually understood each other’.

Pattern 7 adds the n-prefix, and a reflexive, passive or middle meaning. Unlike Classical Arabic, pattern 7 can be applied to already augmented verbs of pattern 5, 6, and 11. In some dialects these augmentation combinations are unpredictable in their meaning. In the perfect it is a pure passive marker, while in the imperfect it may also express potentiality, as in Classical Arabic: dibah, ‘he killed’ → yindibih ‘he is killed, he is killable’.

Pattern 8 inserts t after the C1 of the basic pattern. When there are no further prefixes, a prosthetic i is prefixed. Its meaning is rather close to the meaning of pattern 5 and 6, and especially pattern 7, e.g. ^istalam, ‘receive’. It expresses a reflexive, middle and also a passive sense.

Pattern 9 doubles the third consonant of the basic pattern: C1C2C3C3. As in Classical Arabic, it may denote ‘becoming a colour’, as in ^iswadd, ‘he became black’.

Pattern 10 is formed by prefixing st to the basic pattern. Its meaning is reflexive, middle or benefactive, as in stafham, ‘he sought to understand’, derived from FHM, ‘understand’.

In Najdi there are, as in Classical Arabic, some four-consonantal verbs that derive analogously to pattern 2, 5 and 6. Najdi Arabic has a productive pattern unknown in other dialects or in the Classical language, that is, prefixation of n- and ta-. It behaves like the pattern 5 and 6. Finally, in Najdi the pattern 10 prefix sta- may also be prefixed to pattern 2 or 3 verbs.

4.3.1.3 Aspect and voice

In most Arabic varieties, even in the Gulf and southern Iraq dialects, which are closely related to Najdi Arabic, there is no longer an internal passive (cf. 4.4.1.3). In Najdi Arabic, however, voice and aspect are both still expressed by the vowel quality of the stem vowels (cf. Abboud 1979: 475). The paradigms for the voice, aspect and person, number and gender distinctions, are as in Table 4.9 and Table 4.10.

The stem vowels of these paradigms express aspect and voice. The relation between the categories and the phonological form is not straightforward but the result of phonological rules that apply to the underlying patterns shown in Table 4.11.
Table 4.9 Najdi Arabic transitive inflection

<table>
<thead>
<tr>
<th></th>
<th>Active, ‘to dwell’</th>
<th>Passive, ‘to be imprisoned’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perfect</td>
<td>Imperfect</td>
</tr>
<tr>
<td>1SG</td>
<td>sikan-t</td>
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</tr>
<tr>
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<td>sikan-t</td>
<td>t-askin</td>
</tr>
<tr>
<td>2FEM.SG</td>
<td>sikan-t</td>
<td>t-asikn-i:n</td>
</tr>
<tr>
<td>3MASC.SG</td>
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<td>y-askin</td>
</tr>
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</tr>
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<td>n-askin</td>
</tr>
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<td>t-asikn-u:n</td>
</tr>
<tr>
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<td>sikan-tin</td>
<td>t-asikn-in</td>
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<td>skan-aw</td>
<td>y-asikn-u:n</td>
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<tr>
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</tbody>
</table>

Table 4.10 Najdi Arabic intransitive inflection

<table>
<thead>
<tr>
<th></th>
<th>Active, ‘to drink’</th>
<th>Passive, ‘to be heard’</th>
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<tbody>
<tr>
<td></td>
<td>Perfect</td>
<td>Imperfect</td>
</tr>
<tr>
<td>1SG</td>
<td>srib-t</td>
<td>^-ašrab</td>
</tr>
<tr>
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<td>t-ašrab</td>
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<td>t-ašrib-i:n</td>
</tr>
<tr>
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</tr>
<tr>
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<td>t-ašrab</td>
</tr>
<tr>
<td>1PL</td>
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<td>n-ašrab</td>
</tr>
<tr>
<td>2MASC.PL</td>
<td>srib-tu</td>
<td>t-ašrib-u:n</td>
</tr>
<tr>
<td>2FEM.PL</td>
<td>srib-tin</td>
<td>t-ašrib-in</td>
</tr>
<tr>
<td>3MASC.PL</td>
<td>srib-aw</td>
<td>y-ašrib-u:n</td>
</tr>
<tr>
<td>3FEM.PL</td>
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<td>y-ašrib-in</td>
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Table 4.11 Najdi Arabic vowel patterns

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<th>passive</th>
<th>trans./intrans.</th>
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</thead>
<tbody>
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<td>v1</td>
<td>v2</td>
<td>v1</td>
<td>v2</td>
</tr>
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<td>imperfect</td>
<td>-v1C_Cv2C-</td>
<td>a</td>
<td>i</td>
<td>a</td>
<td>i/u</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>l</td>
<td>i</td>
<td>l</td>
<td>l</td>
<td>l</td>
</tr>
<tr>
<td>perfect</td>
<td>Cv1Cv2C-</td>
<td>a</td>
<td>a</td>
<td>i/u</td>
<td>i</td>
<td></td>
</tr>
</tbody>
</table>

As in Classical Arabic, the active voice in northern Najdi Arabic is expressed by a low v1 vowel. This is raised in most forms in the perfect by the phonological Short Vowel Raising Rule, as in *sakan-* ṭ → *sikan-* ṭ ‘dwell’, 1SG.ACT.PERF, or it is deleted when the CaC Rule applies, as in *sakan-* at → *skan-* at, ‘dwell’, 3FEM.SG.ACT.PERF. This last

---

65 According to Prochazka (1988: 31), šarb-at, and also šarb-aw, and šarb-an, vary with šrib-at, šrib-aw, and šrib-an which are analogous to the form of the transitive inflection.
example shows that CaC must apply before the Short Vowel Raising Rule, otherwise it would result in sakan -at → sikin -at, given that CiC applies before the CaC Rule, as I argue below. Because of šārib -i → šārib -t, ‘drink’, 1SG.ACT.PERF, the Short Vowel Raising Rule must apply after the CiC Rule, otherwise the form would be like the passive šārib -i → šārib -t, where CiC applied to the original i.

The passive voice in Najdi Arabic is expressed by a high v1 vowel, which is deleted when the CiC Rule applies, e.g. in simī -t → smī -t, ‘hear’, 1SG.PASS.PERF, and which becomes an a because of the Guttural Rule in e.g. ‘i-smā’ → ‘a-smā’, ‘hear’, 1.SG.PASS.IMPERF.66 When only considering strong verbs, this v1 vowel can be analysed as an i. Patterns in weak verbs, cf. below, suggest, however, that this v1 vowel must be an u underlyingly, and, that i is the allophone when the vowel is short.

In the active voice the v2 depends both on the aspect and on the stem class of the verb. In the perfect transitive, and the imperfect intransitive the v2 is low. In other cases, the v2 is high. In the passive voice the perfect triggers a high v2 vowel, and the imperfect a low v2 vowel. This v2 vowel is also sensitive to phonological rules. For instance, the CiC Rule yields šārib -at → šārb -at, ‘drink’, 3FEM.SG.ACT.PERF, and the Short Vowel Raising Rule yields ti-hbās-e:n → ti-hbīs-e:n, ‘imprison’, 2FEM.SG.PASS.IMPERF. šārib-at → šārb -at shows that the CiC Rule applies before the CaC Rule. The CiC Rule is, however, also lexically and morphologically sensitive (Prochazka 1988: 33): cf. ya-khtub-u:n versus ya-ktīb-in, and ya-jilš-u:n.

In the intransitive verb class, which have a perfect active voice with a v2 vowel i, e.g. simī, the passive voice is rather similar to the active voice. Moreover, for many verbs of this class, there are hardly any semantic differences between the active and passive voice. When CiC would apply after the Short Vowel Raising Rule, conflations would occur. Passive and active voice actually were conflated in many Najdi varieties, though not in the Shammar dialect (cf. Ingham 1982: 45ff., and section 4.3.2.2 below).

As in Classical Arabic, the perfect versus the imperfect aspect is not only expressed by the vowel quality of the vowel infixes, but also by different syllable structures, and two different sets of suffixes, which I will discuss in section 4.3.1.4.

The vowel patterns of the augmented patterns 2, 3, 4, 7, 8, 9, and 10 follow the transitive stem class, and the phonological rules apply. This yields forms like: LBS, labbasaw → labbisaw, ‘dress’, 3MASC.PL.ACT.PERF and HJM, ‘attack’, t-ha:jimi:n → t-ha:jmi:n, ‘attack’, 2FEM.SG.ACT.IMPERF. Pattern 5 and 6 deviate since they have an a as v2 in the imperfect, and, in addition, they have the suffixes of the passive conjugation in the active forms as well, o:n, e:n, an, e.g. y-tana š-sāf/ y-tana š-sīf-o:n, ‘dry oneself’, 3MASC.SG/ PL.ACT.IMPERF.

4.3.1.4 Person, gender and number

There are two sets of PGN affixes, which express first, second and third person; masculine and feminine; singular and plural.

66 Abboud (1979: 476, 490) analyses this high v1 vowel as part of the prefix. This leads to a more cumbersome analysis when generalising over the stem vowel patterns in different augmented forms. In studies of the Classical language this first vowel of the imperfect is also analysed in different ways (cf. Stoetzer 1997 versus Holes 1995).
Apart from the disappearance of the dual, the structure of Najdi Arabic has remained quite similar to the Classical Arabic structure, and I will analyse the Najdi Arabic affixes in a similar way (cf. 4.2.1.3). The feature specification of Najdi Arabic imperfect affixes is as in Table 4.14.

Table 4.13 Najdi Arabic imperfect inflection

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Plur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>...</td>
<td>n...</td>
</tr>
<tr>
<td>2m</td>
<td>t-...</td>
<td>t-...u:n/ o:n</td>
</tr>
<tr>
<td>2f</td>
<td>t-...i:n/ e:n</td>
<td>t-...i:n/ an</td>
</tr>
<tr>
<td>3m</td>
<td>y-...</td>
<td>y-...u:n/ o:n</td>
</tr>
<tr>
<td>3f</td>
<td>t-...</td>
<td>y-...in/ an</td>
</tr>
</tbody>
</table>

As in Classical Arabic, further general principles are needed to derive the correct forms, which I have discussed above. The 3FEM.SG.PERF suffix -at becomes -eh when it is not followed by other suffixes.

Variation in the suffixes of the imperfect conjugation depends on voice, cf. Table 4.9 and Table 4.10. In Classical Arabic this variation only depends on the weak/strong verb distinction. However, the Classical Arabic suffixes that differed only phonologically make semantic distinctions in Najdi Arabic. The suffix, -aw, 3.MASC.PL, that was only used in weak verbs in Classical Arabic, is used for all verbs in Najdi Arabic.

67 The retention of a gender distinction in the plural is one of the typical features of conservative Bedouin speech in Arabic.
4.3.1.5 Mood

The mood system of Classical Arabic has completely disappeared from Najdi Arabic (Ingham 1994: 118ff., cf. also the discussion above in 4.1.2 about the status of modal suffixes in Classical Arabic itself). Instead, a range of particles, preverbs and other modal elements are used to express modality. Many of these items are grammaticalised items in the sense of Hopper and Traugott (1993). Their meaning is extended and generalised, their form is reduced, their positions are more fixed, and they may merge with other words. However, they are not part of verbal inflection in Najdi Arabic. The form that is grammaticalised most, yabi ‘(future/intent) will’ is sometimes prefixed to the verb in a reduced form: tabi ṭru:hi:n → bi ṭru:hi:n ‘you (FEM.SG) will go’. However, this is not obligatory, and yabi is never prefixed to forms with perfect aspect. In addition, unlike most other Arabic varieties, the forms without any particle, clitic or prefix, do not express marked modality, like irrealis. Therefore I do not analyze mood as a verbal inflectional category.

4.3.1.6 Object clitics

The system of pronominal object suffixes has remained largely the same. They are, however, merged a little more into the phonological form of the verb, since they trigger stress modifications and vowel lengthenings (Ingham 1994: 30). Among the Najdi dialects there is some variation in the form of these suffixes. The suffixes in the northern Najd are as in Table 4.15.

Table 4.15 Northern Najdi Arabic object clitics

<table>
<thead>
<tr>
<th></th>
<th>Sing</th>
<th>Plur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>...an/ nan</td>
<td>...na</td>
</tr>
<tr>
<td>2m</td>
<td>...ak/k</td>
<td>...kam</td>
</tr>
<tr>
<td>2f</td>
<td>...ie/c</td>
<td>...cin/kin</td>
</tr>
<tr>
<td>3m</td>
<td>...uh/w/h</td>
<td>...ham</td>
</tr>
<tr>
<td>3f</td>
<td>...ah/h/wah/yah</td>
<td>...hin</td>
</tr>
</tbody>
</table>

The choice between the allomorphs is defined by the ending of the word. The plural object clitics are simply attached to the verb, and trigger an epenthetic vowel, which is the same as the vowel in the suffix, when the verb ends on a consonant. The singular clitics have an initial vowel behind a consonant-final verb. After a verb ending on a vowel the consonant-initial allomorph is used for the 1st and 2nd person objects. For 3rd person objects the 3MASC w appears after verbs ending on a; otherwise it is h. The 3FEM h occurs after a; other vowel endings merge with the suffix into -wah, after back vowels, and into -yah after front vowels. Examples are ẓaː f-uh ẓaː f-a-na, ‘he saw him’, ‘he saw us’; jib-tu → jibtwaḥ, ‘you brought her’. The phonological rules of High Vowel Raising and vowel deletion also apply here, which yield rather opaque structures like: kital, ktiluh, ktalam, ‘he killed’, ‘he killed him’, ‘he killed her’.

According to Ingham (1982: 74ff.), this structure has become more regularised than in Classical Arabic, that is, masculine suffixes tend to have an a vowel, and feminine suffixes an i, and, furthermore, singular would be expressed by VC suffixes, and plural
by CV(C). In contrast with Classical Arabic the form of the Najdi Arabic suffixes is more motivated, both phonologically as well as semantically.

### 4.3.1.7 Stem classes

As in most Arabic varieties, variations in the consonantal skeleton induce allophony and allomorphy in the conjugation (cf. 4.2.1.6). As in Classical Arabic, sequences of C2vC3, where C2=C3, are avoided, and v2 is deleted. In comparison with their non-doubled counterparts such doubled verbs appear as a result of metathesis: sakan-aw → (CaC) skan-aw, ‘dwell’, 3MASC.PL versus sabab-aw → sabaw, ‘curse’, 3MASC.PL. When consonantal suffixes follow, an e: in the active, and i: in the passive is inserted, e.g. sabbe:na, 1PL.\(^{68}\) When no suffixes follow, degemination takes place.

Verbs with a weak first consonant behave like strong verbs when C1 is followed by a vowel, e.g. |MR, ‘command’, |amar, 3MASC.SG.ACT.PERF. When followed by a consonant, the weak consonant is absent and the preceding vowel is lengthened, e.g. ya-mir → ya:mir ACT.IMPERF. In several instances, an i: is expected, but an u: occurs, e.g. in yi-mir → yu:mar, PASS.IMPERF. This can be explained when an underlying u instead of an i as v1 is assumed (cf. Table 4.11). According to Prochazka (1988: 61ff.), if the first consonant is an alif, it is also deleted in the perfect.

When C2 is weak, the rules for weak consonants interact with other phonological rules, resulting in an opaque relation between the underlying weak consonant, and the phonological form (cf. Table 4.16).

<table>
<thead>
<tr>
<th>Table 4.16 Najdi Arabic weak consonant stems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active</strong></td>
</tr>
<tr>
<td>3rd person</td>
</tr>
<tr>
<td>Pattern 1</td>
</tr>
<tr>
<td>Pattern 4</td>
</tr>
<tr>
<td>Pattern 8</td>
</tr>
<tr>
<td>Pattern 10</td>
</tr>
</tbody>
</table>

Table 4.16 gives, for instance, for JB, ‘bring’, ja:baw, 3MASC.PL.ACT.PERF and ji:bi:na, 1PL.PASS.PERF. Pattern 1 has three sub-classes, defined by the kind of weak consonant, w, y, or ।.

If the third consonant is weak, the following rules provide the correct forms ($ is a weak consonant, and v stands for a vowel):

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\(^{68}\) Synchronically this can be considered as an insertion. Diachronically, these verbs have changed their augmentation pattern, and are modelled after pattern 2 (Versteegh, pers.comm.).
These rules partially depend on morphological information, since slightly different rules apply in declensions of nouns with weak third consonants.

As in Classical Arabic the effect of weak consonants depends on the kind of weak consonant, the surrounding vowels, the syllable structure of the verb, and morphological information. Related Arabic dialects in Iraq have reduced the variation caused by weak consonants (cf. Ingham 1982: 39).

As in Classical Arabic different conjugations also emerge thanks to different vowel patterns in the active voice of the basic pattern. However, there are basically only two patterns left, which, according to Ingham (1994), partly follow the semantic distinction between transitives and intransitives. The transitives have a CaCaC-stem in the perfect, and an aCCiC stem in the imperfect. The intransitives have a CaCiC stem in the perfect, and an aCCaC stem in the imperfect. In contrast with Classical Arabic, these vowel patterns are far less uniform throughout the paradigm, because of the pervasive effects of the phonological rules that govern vowel quality.

4.3.2 Analysis

As in all languages discussed so far, the Economy Principle and the Transparency Principle play a role in accounting for the Najdi Arabic data. Najdi Arabic stands out because of the promotion of several phonological principles that have had a pervasive effect on the morphological principles.

4.3.2.1 Economy

In Najdi Arabic the Economy Principle is ranked slightly higher than in Classical Arabic. The augmentation system has remained largely unchanged; a few semantic shifts have taken place, but the system as a whole has not moved towards less or more Economy. The various augmentation patterns are still only partly predictable in their meaning, and also the two stem classes have only a vague relation to notions of agentivity (cf. Ingham 1994: 73).

The syntactic categories expressed in Najdi Arabic are also largely the same. Passive versus active voice and perfect and imperfect aspect are still expressed. Three persons are still distinguished, and two genders. However, as in all modern dialects, one number category has disappeared, the dual. Categories of the object are also expressed. One category has completely disappeared: mood. In contrast with the sedentary dialects, where gender is not expressed in all plural forms, in Najdi Arabic the same combinations of categories are possible as in Classical Arabic.

4.3.2.2 Transparency

Under this heading I discuss the four possible violations of the Transparency Principle, that is, fusion, homonymy, fission and allomorphy.
The general structure of Najdi Arabic is similar to Classical Arabic, and the same categories are still fused, that is, person, gender and number, in both the subject and the object affixes (cf. 4.2.2.2). As in Classical Arabic, aspect and voice are not fused. Aspect licenses the choice of PGN affixes and the choice of a particular consonantal skeleton, while voice only triggers a particular vowel pattern.

Structural homonymy comprises the category combinations that are structurally conflated. This is essentially the reformulation of the Economy Principle in terms of the Transparency Principle, because every filtering of a category combination is at the same time a conflation, that is, a violation of the No Homonymy Principle. Structural homonymy comprises therefore the same forms as mentioned under Economy above. In addition there is so-called accidental homonymy, in which forms are just accidentally the same, without any filtering out on the level of meaning (cf. section 2.1.2.2, and Carstairs-McCarthy 1987). In Najdi Arabic the 2SG.MASC.IMPERF and 3SG.FEM.IMPERF are still accidentally the same. As in other Arabic varieties, like Moroccan, the 2SG.MASC.PERF and 1SG.PERF are also accidentally the same in Najdi Arabic as spoken by the Shammar.

In other Najdi dialects however, more homonymies occur. The further away from the Najdi heartland of the Shammar, the more homonymies occur. These homonymies occur between active and passive voice, firstly in the intransitive verb class. Ingham (1982: 45ff.) distinguishes between several stages in the increase in these homonymies:

1. The first stage is represented by the Shammar, where passive and active voice are fully distinguished.
2. The second stage is represented by the closely related dialect of Sudair, where the intransitive active imperfect $v_1$ is $i$ instead of $a$ (cf. Table 4.10 and Table 4.11 above and Prochazka 1988: 34). This results in the conflation of passive and active voice for intransitive imperfect forms.
3. Third, there are tribes where the internal passive voice only exists for third persons.
   In those instances perfect intransitive forms like, $simi^\cdot na$, ‘hear’, 1PL.PERF.ACT disappear, and, instead the active form is similar to the passive form, $smi^\cdot na$.
4. Fourth, there are tribes, mainly in Mesopotamia, where the passive is only used in poetry and idiomatic contexts. In these varieties the formation of the intransitive stem class is merged with passive formation in the transitive class, which leads to the collapse of the four conjugations, passive versus active, and transitive versus intransitive, to only two conjugations. Partially, the conjugations for the imperfectives of the transitive and intransitive classes also merge, yielding even less variation.
5. In the fifth stage, the vowel infixes in the stem are not distinguished by transitivity, voice or aspect any longer. In these dialects of Mesopotamia, as in most sedentarised dialects, root vocalism is fully defined by phonological rules, while other information is expressed outside the root. The augmentations express voice, while the PGN suffixes in combination with syllable structure express aspect.

The kind of homonymy at stake here falls between accidental and structural. The possibility for active and passive forms to become homonymic is accidental, because the change in application of the phonological rules made the passive and active voices accidentally look more similar. The actual occurrence of homonymy, however, is triggered by structural considerations as well. From a phonological point of view, it was also possible that the $v_1$ $a$ in the imperfect transitive verb class had become $i$. The conflation, however, took first place only in the intransitive class. Although
passivisation of intransitives was possible, and was actually frequent in Classical Arabic (Versteegh, pers.comm.), the conflation between active and passive was somehow easier in this semantically defined class.

The other conflation of the vowel pattern of the intransitive class with the pattern of the passive was also only possible thanks to close phonological similarity, but the route taken towards conflation was led again by structural considerations, since 3rd person forms were exempted from the conflation. That is, simCV-t 2SG.MASC.PERF.ACT and smCV-t 2SG.MASC.PERF.PASS are conflated at the third stage, while simC 3SG.MASC.PERF.ACT and smCV 3SG.MASC.PERF.PASS are not conflated at that stage.

The Transparency subprinciple “No Fission” operates in Najdi Arabic in the same way as it did in the Classical language.

The No Allomorphy constraint is violated in Najdi Arabic in several ways. As in Classical Arabic, the expression of aspect and voice is sensitive to the stem class of the verb and the consonantism of the root, that is the presence of weak consonants. The extent of allomorphy has decreased with respect to the number of stem classes; in the Najdi Arabic of the Shammar verbs fall into two formal classes, while in Classical Arabic there were five patterns by which perfect and imperfect vocalism could be related to each other. This is partly explainable by the lower functional load of the i/u distinction, which no longer yields grammatical distinctions. But even when abstracting from the i/u difference in Classical Arabic, there has been a reduction in the number of perfect-imperfect relations (cf. Table 4.3 and Table 4.11 above).

Allomorphy due to weak consonants still widely occurs in Najdi Arabic. However, because of the partial conflation of i and u, there is a little less allomorphy. In addition, some allomorphy between strong versus weak verb suffixes has disappeared; that is, in contrast with Classical Arabic in the 3PL.MASC.PERF, in Najdi Arabic the suffix -aw is used in both strong as well as weak verbs.

On the other hand there is more allomorphy in Najdi Arabic, because of the higher importance of several phonological rules. Thanks especially to the Short Vowel Raising Rule, the Guttural Rule and the Resyllabification Rule, the relation between vowel quality and aspectual and voice category has become more obscure. For instance, an i on v1 position may mark passive voice, but it may also be a result of the Short Vowel Raising Rule, and therefore mark active voice. An i on v2 position can be a raised a perfect marker, a genuine perfect marker in the intransitive, a marker of the imperfect in the transitive class, or a marker of the perfect in the passive voice. The relation between vowel quality and aspect/voice is further clouded by the variation of aspect and voice expressions among the various Najdi dialects, as we saw above under homonymy.

Shammar Arabic differs from most other Arabic varieties by maintaining the Classical Arabic internal passive and the 4th augmentation pattern. Like other modern Arabic varieties it differs from Classical Arabic in having lost the mood suffixes. However, there is also an innovation originating from the Shammar region that is different from both Classical and modern Arabic. Several suffixes of the object pronominal system have changed, e.g., instead of Classical Arabic -kum/-hum, 2MASC.PL.OBJ/3MASC.PL.OBJ, Shammar Arabic has -kam/-ham. According to Ingham (1982: 74ff.), these changes have made the language more complex since they introduce more lexical forms. However, the case is not so clear-cut, since the allomorphy is phonologically conditioned, and the
neighbouring dialects, which do not have these new forms, also have some phonologically conditioned allomorphy in some of their object suffixes. Moreover the object pronominal system of the Shammar seems to be more semantically motivated than before (cf. 4.3.1.6).

In conclusion, in the Arabic variety of the Shammar the former relatively transparent structure has been obscured by phonological rules, but the stem internal expression of aspect and voice has not been wiped out. In less isolated varieties voice and aspect are not usually expressed in this way. On one hand allomorphy is ranked a little lower owing to the disappearance of three of the five kinds of relation between perfect and imperfect vocalism; on the other hand the phonological rules may also induce more allomorphy.

The situation of Najdi Arabic is comparable to the situation of Scandinavian, where phonological rules had also risen in rank resulting in less transparency in comparison to older stages of Germanic. As in Scandinavian, Arabic, from the perspective of Classical Arabic and Najdi Arabic needs only a few triggers to produce far reaching changes in category inventories and allomorphy.

4.3.2.3 Isomorphy

The order in Classical Arabic was:

\[(P_{sub}G_{sub}N_{sub}) - [\text{Verb+Aspect+Voice}] - G_{sub}N_{sub} - \text{Mood} - (P_{obj}G_{obj}N_{obj}).\]

I placed \((P_{sub}G_{sub}N_{sub})\) and \((P_{obj}G_{obj}N_{obj})\) between brackets, because \((P_{sub}G_{sub}N_{sub})\) is only prefixal in the imperfect, and \((P_{obj}G_{obj}N_{obj})\) is only present in certain syntactic environments.

The order in Najdi Arabic has not changed fundamentally. The only difference is caused by the disappearance of the category of mood:

\[(P_{sub}G_{sub}N_{sub}) - [\text{Verb+Aspect+Voice}] - G_{sub}N_{sub} - (P_{obj}G_{obj}N_{obj}).\]

This indicates that the Najdi affix order complies better with the ideal order I described in 2.1.3.2 since the modal affix is no longer found in the ‘wrong’ place.

4.3.2.4 Other Principles

The Morphological Principle that was operative in Classical Arabic is also operative in Najdi Arabic. The phonological rules operative in Classical Arabic still apply in Najdi Arabic; for instance, the rule that forbids \(C_vC_a\) sequences where \(C_a = C_b\), also exists in Najdi Arabic. Furthermore, although the exact deviations are different, the weak verbs still deviate from the strong verb conjugations, as in Classical Arabic, because of several phonological rules that apply to weak consonants.

In Najdi Arabic several other phonological principles have become more important than they are in Classical Arabic (cf. 4.3.1.1). Those which affect morphological structure are:

- Do not distinguish between \(i\) and \(u\).
- Insert a vowel between \(C_2\) and \(C_3\) if no vowel follows, or if \(C_3\) is a \(r, l, w, y, \) or \(n\).
- Insert an \(i\) after a heavy syllable before a consonantal suffix.
- \(CiCvC\# \rightarrow CCvC\#,\) which applies from right to left.
- \(CaCvCv \rightarrow CCvCv.\)
- Vowel quality in open syllables should be high.
When an /l, n, r, or w/, or an uvular, pharyngeal or glottal fricative follows or precedes a vowel, the vowel should be low.

Uvular, pharyngeal and glottal fricatives are not allowed syllable-finally when preceded by an /a/.

At least two Classical Arabic principles are less important. These are:

- CC is not allowed word initially.
- -CCC- is never allowed.

In 4.7 I show how changes in the order of application of these rules (or, in OT terms, changes in constraint ranking) can give insight from a general theoretic perspective into the differences between Classical Arabic, and the modern Arabic varieties like Najdi, Moroccan and Kinubi Arabic.

4.4 Moroccan Arabic

I have used the following sources for the Moroccan Arabic data: Caubet (1993a, 1993b); Holes (1995); Marçais (1977); Taine-Cheikh (1983); Versteegh (1997). The data shows considerable morphological change.

4.4.1 Data

The main differences between Moroccan and Classical Arabic are the reduction in the number of vowels, the change of syllable structure, the reduction in inflectional categories, and the decrease of allomorphy. The general outline of the Moroccan verb, however, has remained the same. The Moroccan Arabic verb still consists of a skeleton of usually three consonants, which can be augmented by affixes, and by consonant and vowel doubling. There are, however, less augmentations in Moroccan than in Classical Arabic. The skeletons, possibly augmented, are fleshed out with a vocalic infix, and can be prefixed by a passive voice marker. The skeleton is further dressed up by affixes that signal person, gender and number of the subject and object, aspect and mood. I will now discuss each separate component in more detail.

4.4.1.1 Phonological preliminaries

Moroccan Arabic, like Classical Arabic, has three long vowels, /a/, /i/, and /u/. In addition, two of the three short vowels of Classical Arabic have subsisted: /ɔ/ and /o/. Their status is however problematic, because /o/ can in many instances be analysed as an allomorph of /ɔ/ in the context of velar and uvular consonants, and occurs only sporadically in minimal pairs with /ɔ/. Moreover, in the older urban and judaic dialects and in many idiolects the phoneme /o/, as distinct from /ɔ/, is not attested at all. The value of the other short vowel is also disputed. In most instances /ɔ/ can be analysed as an epenthetic vowel, resulting from constraints on consonant clustering. However, there are some word pairs where phonotactic rules cannot explain the positioning of /ɔ/, e.g. /drɔb/, ‘he hit’ versus the nominal /dɔrb/, ‘hitting’. Therefore, I will consider the Moroccan Arabic of Fez as having two short vowels. The lessening of short vowels may be a result of contact with Berber speakers (cf. Lévy 1996: 133).

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69 See note 55.
The phonetic difference between the so-called short and long vowels is not primarily one of quantity, but one of distribution. Short vowels do not appear in open syllables, while long vowels may appear in both open and closed syllables. Furthermore, the short vowels display more allophonic variation, that is, they are more unstable; ḍ and ḍ are only convenient labels for the allophonic range [u], [o] for ṣ, and [a], [i], [e], and [u] for ḍ. Therefore ‘short’ and ‘long’ should not be considered to refer straightforwardly to phonetic quantity.

These changes in the system of vowels changed the range of allomorphy, and the number of possible contrasts through vocalism. Furthermore, in many environments short vowels have disappeared, and long vowels have become shorter. This has led to new constraints on syllable structure, which, in combination with the restrictions on distribution of short vowels, has led to more instances of metathesis, which makes the inflectional structure less transparent, cf. the forms in Table 4.18.

4.4.1.2 Augmentations

In Classical Arabic the augmentations of the root resulted in ten frequent and five rare patterns. In Moroccan Arabic however, only six patterns are still used in colloquial speech. These are, in addition to the basic pattern, patterns 2, 3, 5, 6, and 11 (or 9, see below). In some dialects there are some sporadic instances of pattern 7 and pattern 10 verbs, which must have been borrowed from Classical or Standard Arabic (Caubet 1993a: 50). Several pattern 8 and 9 verbs have also subsisted. In Moroccan Arabic these conjugate as pattern 11 (or 9) verbs. Pattern 4 expressed causative meaning in Classical Arabic, although perhaps with a slightly different meaning (Boumans, pers.comm.), which is today only expressed by pattern 2, or by analytical means. According to Boumans (pers.comm.) there are also some relics of pattern 4 in lexically related transitive/ intransitive pairs. Borrowings from Spanish and French conjugate like pattern 1, 2 or 3 verbs that end on a weak consonant.

In Classical Arabic the passive voice is expressed with vowel alternations, although pattern 5, 6, 7 and 8 also result in a kind of passive, reflexive, or reciprocal meaning by affixing t or n (cf. 4.2.1.1). In the sedentary dialects of Moroccan Arabic there is only one way to render a passive voice, namely by a prefix with the allomorphs t, or n in the Fez dialect (Caubet 1993a: 33), and also nt, n and tn in other dialects (Taine-Cheikh 1983: 77).70 Moroccan Arabic has replaced the internal passive voice by a system composed of material from the augmentation system. The exact way in which the augmentation and voice system has changed is complex; besides the t-prefix, the n-prefix of the 7th pattern seems to have played a role, although this latter pattern does not exist in Moroccan anymore. Taine-Cheikh (1983: 77) says: “…we are conscious of the fact that the [passive] forms certainly do not have the same formation, and that they are not explained only by analogical remodelling on the 5th and 6th [augmented] forms with prefix t-.”71

70 Cf. Boumans (1998) for a discussion of the phonological and morphological conditions of this allomorphy.
71 “…nous sommes conscients du fait que ces formes sont loin d’avoir toutes la même formation et qu’elles ne s’expliquent pas uniquement par remodelage analogique sur les 5è et 6è formes à préfixe t-.”
The augmentations and internal vowel patterns can be seen in Table 4.17. These vowel patterns have been severely affected by their different phonological make-up. The numerals refer to the augmented patterns.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Imperfect</th>
<th>Perfect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C₁C₂V₂C</td>
<td>C₁C₂V₂C₃</td>
</tr>
<tr>
<td>1⁴</td>
<td>tC₁C₂V₂C</td>
<td>tC₁C₂V₂C₃</td>
</tr>
<tr>
<td>2</td>
<td>CvCCvC</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>tCvCCvC</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cv:CVc</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>tCv:CVc</td>
<td></td>
</tr>
<tr>
<td>9/11</td>
<td>C₁C₂V₃</td>
<td></td>
</tr>
</tbody>
</table>

Pattern 1 is the basic pattern which no longer has extensive allomorphy in its vowel alternation. The second vowel in the imperfect is in fact an u in only 4% of the verbs, although in weak verbs the vowel pattern remains sensitive to aspect. Pattern 1⁴ is the extension of pattern 5 and 6 to pattern 1 (see below).

Pattern 2 is formed by doubling the second consonant of the basic form: C₁C₂C₃. In Moroccan Arabic this pattern has a causative or intensive value, e.g. tC一流的‘to know’ → tC一流的‘to teach’. It may also have a denominal sense, e.g. k,t, ‘black’, k,t,t, ‘to blacken’.

Pattern 3 was formed in Classical Arabic by lengthening of the V₁ of the basic form: C₁V₁:C₂C₃. After vowel reductions in Moroccan Arabic this means that pattern 3 is formed by having an a behind the first root consonant. When C₁C₂C₃ denotes an act that affects an object, pattern 3 denotes the attempt to perform that act. S,LH ‘be good’ → S,LH ‘to learn’.

Pattern 5 adds a t-prefix to pattern 2 verbs: C₁C₂C₃C₄ → tC₁C₂C₃C₄. It expresses the state into which the object of the action denoted by the second form is brought. Its meaning is passive, reflexive, or effective. For example, t,LM ‘to teach’ → t,LM ‘to learn’.

Pattern 6 adds the t-prefix to pattern 3 verbs: C₁aC₂C₃ → tC₁aC₂C₃. Its meaning is like the meaning of pattern 5, effecting a passive or reciprocal sense of the pattern 3 verb. S,LH ‘reconcile’ → tS,LH ‘to reconcile with each other’.

Pattern 11 is a conflation of former patterns 8 and 10. It has the form, C₁C₈aC₉, and mainly denotes so-called ‘quality verbs’, like HMaR, ‘being red’. When there is a person suffix, then after the C₃, another long or assimilated vowel appears, cf. 4.4.1.4. According to Versteegh (pers.comm.) this could be the ninth pattern as well, in which the second vowel has been lengthened.
As in Classical Arabic there are also some four-consonantal roots, conjugated like pattern 2 of the tri-consonantal roots. The passive form of verbs of this class behave like the passive form of tri-consonantal verbs of pattern 2, that is, like pattern 5 verbs. Unlike Classical Arabic, however, no other augmentations in four-consonantal verbs are possible.

4.4.1.3 Aspect and voice

Voice is no longer expressed by stem internal vowel modification, cf. section 4.4.1.2. Fewer vowel distinctions and stricter constraints on syllable structure have reduced the possibilities to express voice in this way. In Moroccan Arabic prefixation is the only means to express passive voice. Today all transitive verbs can be passivised by a prefix. A reduction in the previous internal way of expressing voice has taken place, but on the other hand, the prefixal process to express passive voice has become more productive in Moroccan Arabic.

The reduction in vowel distinctions resulted in only a few strong verbs where an aspectual vowel alternation subsisted, e.g. skɔn/ yskon, PERF/ IMPERF, 'he lived'. Moreover, this alternation is partly phonologically conditioned, since it occurs mainly in the context of back consonants (Boumans, pers.comm.). In strong verbs aspect is now mainly visible from the differences between the two sets of PGN affixes. In verbs with a weak second or third consonant, however, the quality of the stem vowel depends on aspect, cf. 4.4.1.7.

Caubet (1993b) argues that the aspectual distinction between an imperfect and a perfect meaning is changing in the modern Arabic varieties towards a primary distinction in terms of simultaneity (cf. Caubet 1993b: 151ff.). Indeed, in Moroccan Arabic the aspectual value of the verb does not directly refer to a perfect or imperfect meaning, in the sense of Comrie (1976). Depending on the presence of the mood prefix and on the finite status of the verb, various meanings can result. However, the two conjugation types still clearly exist, and they decisively contribute to the over-all meaning of a verbal predicate.

4.4.1.4 Person, gender and number

As in Classical Arabic, there are two sets of PGN affixes, which in Moroccan Arabic have a higher functional load, since they also carry most of the aspectual meaning in strong verbs. There are still two genders, and three person distinctions, but only two numbers, since the dual no longer exists. Furthermore, some gender-person combinations no longer exist. In the imperfect, there are no gender distinctions in the plural, and in the perfect there is no gender distinction in the 2SG anymore. The affixes of the perfect and imperfect stems are in Table 4.18 and Table 4.19.

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72 This applies to most Moroccan dialects, but among some Maghrebian Bedouin dialects the vocalic passive is still widespread (cf. Taine-Cheikh 1983: 66ff).
73 Caubet (1993: 32) mentions only twelve verbs which have this distinction. According to Boumans (pers.comm.) this distinction is highly variable among speakers.
74 The alternation, or metathesis, between ḫəb and ḫəb in the paradigm is a result of the phonological constraint on open syllables. ka is the mood marker, see below.
For Classical Arabic I assumed a morphological principle which demands a fissioned insertion of a fused PNG-category for the imperfect (cf. section 4.2.2.4). For Moroccan Arabic such an analysis is still profitable, since it would solve the problem that gender is expressed with a suffix in the 2SG, while it is expressed with a prefix in the 3SG. The fused PGN category may spread over the prefixal and suffixal position. The category specifications for the affixes of the imperfect are then as in Table 4.20.

Table 4.20 Moroccan Arabic affixes of the imperfect

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-</td>
<td>1</td>
</tr>
<tr>
<td>y-</td>
<td>3 masc</td>
</tr>
<tr>
<td>t-</td>
<td>ø</td>
</tr>
<tr>
<td>-i</td>
<td>fem/2</td>
</tr>
<tr>
<td>-u</td>
<td>plur</td>
</tr>
<tr>
<td>-ø</td>
<td>ø</td>
</tr>
</tbody>
</table>

### 4.4.1.5 Mood

The verb-final mood suffixes of the imperfect in Classical Arabic, do not exist in Moroccan Arabic. However, in Moroccan Arabic mood is indicated by an obligatory grammaticalised pre-verb, *ka-* , which has dialectal alternants like *ta-* /a-, and *qa-*. It probably derives from a form of the existential verb *kana* (cf. Ferrando 1996: 126ff.), while the other forms had meanings like ‘here’, or ‘sit’ in Moroccan Arabic. The use of such a construction may have been entrenched by Berber influence in Moroccan Arabic, since in Berber languages such constructions also exist (Caubet 1993b: 185ff.).

75 Whether they were still in use when Islam began is uncertain, cf. section 4.1.2.
The prefix *ka-* is used in the indicative, or **realis**, for imperfect aspect only. The bare imperfect form of Classical Arabic is now used for the subjunctive and other modal meanings like dubitative, uncertain future, and counterfactual. The bare imperfect form can have both perfect and imperfect meanings. In some regions this *ka-* is sensitive to person (cf. Caubet 1993b: 184ff.), but in most dialects it is an unaltered prefix preceding the person prefixes of the imperfect forms, e.g. *kanktab* ‘I am writing’, and *kayktab*, ‘he is writing’. Thus the mood suffixes have not simply disappeared or been eroded, but the whole modal system has been reshaped.

### 4.4.1.6 Object clitics

The object pronouns in their bound form are considered by Caubet (1993a: 160) to be suffixes.76 In Moroccan Arabic, the pronominal suffixes are as in Table 4.21.

<table>
<thead>
<tr>
<th></th>
<th>sing</th>
<th>plur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-ni</td>
<td>-na</td>
</tr>
<tr>
<td>2m</td>
<td>-(a)k</td>
<td>-kum</td>
</tr>
<tr>
<td>2f</td>
<td>-ki</td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>-u/-h</td>
<td>-hum</td>
</tr>
<tr>
<td>3f</td>
<td>-ha</td>
<td></td>
</tr>
</tbody>
</table>

Examples are: *drštktum, drštitu*, ‘I beat you (plur), him’.

### 4.4.1.7 Stem classes

As in Classical Arabic, the augmentations and affixations display some variation, although to a lesser extent, depending on the quality of the consonants of the skeleton (cf. 4.2.1.6). Verbs with an identical consonant in the second and third position deviate from the basic pattern by displaying metathesis. This also occurs, for phonological reasons, in forms with vowel initial PGN suffixes (cf. 4.4.1.1, and 4.4.2.2). In these verbs metathesis takes place in almost the whole paradigm, yielding a conjugation on the basis of C₁C₂ C₃, e.g. SG.IMPERF.REAL of *DKK* ‘to pile’: *kandk*, *katsk*, *katskki*.77 They also trigger long vowels in the PGN suffixes in the 1stp and 2nd person perfect: *dekk-it* → *dekk-iti*, etc.

Weak verbs (cf. 4.2.1.6) with an initial weak consonant behave like basic forms in the finite conjugation.78 In Moroccan Arabic there is a substantial group of verbs which have a vowel in their skeleton instead of a second consonant. These correspond to the Classical Arabic verbs with a semi-vowel as second element in the CCC-skeleton. In Moroccan Arabic these verbs are regular with respect to the PGN affixes in the imperfect. They deviate in the perfect, where 3PERF always has the vowel *a*, while other persons shorten the vowel in their stem, *a*, and *i* becoming *ə*, and *u* becoming *o*. An

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76 These affixes are phonologically integrated in the word, that is, some assimilation takes place. Stems ending in a vowel behave slightly differently, and the vowel preceding the object affix is not subjected to stress-induced word-final vowel shortening.

77 At least in all forms discussed here, but not in the passive participle (cf. Caubet 1993: 35).

78 Two verbs, *kla* ‘to eat’, and *xda*, ‘to take’ behave slightly differently.
example of such a verb is: *GUL* , ‘to say’: 2FEM.SG.IMP.REAL *katguli* 3PL.IMP.REAL. *kaygulu*, 2PL.PERF.REAL *goltu*, 3PL.PERF.REAL *galu*. These ‘deviations’, in fact, are the relics of the vowel alternations in Old Arabic which indicated aspect in both strong and weak verbs.

Verbs with a weak consonant in the third position in the skeleton display most variation. In the perfect aspect they have, irrespective of the quality of the semi-vowel, an *a* at the end of the stem in the third person, or an *a*, word-finally, in the 3MASC.SG. In the other persons, the stem ends on *i*. The whole paradigm of the perfect is as in Table 4.22.

**Table 4.22 Moroccan Arabic weak verb perfect inflection**

<table>
<thead>
<tr>
<th>Person</th>
<th>bdi ‘to begin’</th>
<th>bg.a ‘want’</th>
<th>h.bu ‘kruipen’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.SG</td>
<td>bdi -t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.SG</td>
<td>bdi -ti</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.MASC.SG</td>
<td>bda -ə</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.FEM.SG</td>
<td>bda -t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.PL</td>
<td>bdi -na</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.PL</td>
<td>bdi -tu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.PL</td>
<td>bda -w</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the imperfect there are three classes, with forms ending in *a*, *i*, or *u*. The imperfect PGN vocalic suffixes become semi-vowels, or assimilate to the stem. The three classes are conjugated as in Table 4.23.

**Table 4.23 Moroccan Arabic weak verb imperfect inflection**

<table>
<thead>
<tr>
<th>Person</th>
<th>bda ‘to begin’</th>
<th>bg.a ‘want’</th>
<th>h.bu ‘kruipen’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.SG</td>
<td>ka-n-bda</td>
<td>ka-n-bg.i</td>
<td>ka-n-h.bu</td>
</tr>
<tr>
<td>2.MASC.SG</td>
<td>ka-t-bda</td>
<td>ka-t-bg.i</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>2.FEM.SG</td>
<td>ka-t-bda:y</td>
<td>ka-t-bg.i</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>3.MASC.SG</td>
<td>ka-y-bda</td>
<td>ka-y-bg.i</td>
<td>ka-y-h.bu</td>
</tr>
<tr>
<td>3.FEM.SG</td>
<td>ka-t-bda</td>
<td>ka-t-bg.i</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>1.PL</td>
<td>ka-n-bda:w</td>
<td>ka-n-bg.iw</td>
<td>ka-n-h.bu</td>
</tr>
<tr>
<td>2.PL</td>
<td>ka-t-bda:w</td>
<td>ka-t-bg.iw</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>3.PL</td>
<td>ka-y-bda:w</td>
<td>ka-y-bg.iw</td>
<td>ka-y-h.bu</td>
</tr>
</tbody>
</table>

In Classical Arabic strong verb stems were also sensitive to aspect. In Moroccan Arabic there are only a few verbs in which vowel alternation still occurs (cf. 4.4.1.3). Interestingly not all of these verbs are from the same subclass as in Classical Arabic. For instance, *dhul/ kaydhol* ‘enter’ is derived from the Classical Arabic *dahala/ yadhulu, ‘enter’*, while *rgdh/ kayrgod* ‘sleep’ is derived from *raqada/ yarqadu* ‘sleep’. This may be explained however, by the variations that already existed in Classical Arabic (Versteegh, pers.comm.).
4.4.2 Analysis

4.4.2.1 Economy

The categories expressed in the Moroccan Arabic verb are mood, aspect and voice, and person, gender and number of both the subject and object. Although these are the same categories as in Classical Arabic, several changes have taken place. Before turning to these changes, I will say something about voice and the augmentation system.

The derivational augmentation system of Classical Arabic has considerably shrunk in Moroccan Arabic, cf. section 4.4.1.2. One pattern, which prefixes a \( t \)- and renders a passive meaning, has extended its domain of application, while the infixal voice device has disappeared. In Classical Arabic, \( t \)- was only prefixed to pattern 2 and pattern 3 verbs.

In Moroccan Arabic, \( t \)- can be prefixed to all verbs, thereby making former pattern 7 and 8 redundant. This meant in fact the emergence of a new passive marker which replaced the earlier internal passive. The conditions of use of the new marker are less sensitive to lexical properties of the verb. The loss of pattern 7 and 8 is peculiar for Maghrebian Arabic varieties. These patterns still exist in other Arabic varieties where pattern 7 has the extended passive meaning which in Maghrebian Arabic has been moulded on the pattern 2 \( t \)-prefix (Taine-Cheikh 1983: 75ff.).

In general, the erosion and disappearance of derivational morphology does not necessarily imply a more transparent or smaller lexicon, since the number of unstructured lexical items may rise as a result (cf. section 1.5.3, and also Mühlhäusler 1974). In the Arabic case, however, the loss of derivational word structure has not led to a larger lexicon, since the meanings of the derivational processes lost are now expressed by more regular devices. For instance, the several slightly different meanings of pattern 5, 6, 7 and 8 have been subsumed by one more uniform way of expressing passive voice, that is, the \( t \)-prefix.

Aspect is more apparent from the choice of affixes than from vowel alternation in the stem (cf. 4.4.1.3 and 4.4.1.7). Economy does not apply to the category of person in Moroccan Arabic. Dual number has disappeared as in most Arabic varieties, and in the plural and in the 2SG.PERF, gender too, can no longer be distinguished.

The affix specification for the imperfect PGN affixes has changed as in Table 4.24.

<table>
<thead>
<tr>
<th>Classical Arabic</th>
<th>Moroccan Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>( ^{-} )=1</td>
<td>-</td>
</tr>
<tr>
<td>( n^{-}=1, pl )</td>
<td>( n^{-}=1 )</td>
</tr>
<tr>
<td>( t^{-}=2 )</td>
<td>( t^{-}=2 )</td>
</tr>
<tr>
<td>( t^{-}=fem )</td>
<td>( t^{-}=fem )</td>
</tr>
<tr>
<td>( y^{-}=ø )</td>
<td>( y^{-}=ø )</td>
</tr>
<tr>
<td>( -a:n=\text{dual} )</td>
<td>-</td>
</tr>
<tr>
<td>( -na=\text{fem, pl} )</td>
<td>( -ø=ø )</td>
</tr>
<tr>
<td>( -u:na=pl )</td>
<td>( -u=pl )</td>
</tr>
<tr>
<td>( -i:na=\text{fem/-2} )</td>
<td>( -i=\text{fem/-2} )</td>
</tr>
<tr>
<td>( -u=\text{ind} )</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.24 Changes in Arabic affix specification
To infer the correct form from a given meaning, as in Classical Arabic, the Panini Principle, and autonomous structure constraints are used. Noyer (1992: 93) formulates the Panini Principle as follows:

- If one rule’s structural description is contained in the other’s, the rule with the more specific structural description applies first (Noyer 1992: 93).

This implies that affixes with empty specifications, ø, correspond to the default case, or to the so-called “Elsewhere” condition. For instance, in the Classical Arabic affix table 3SG is expressed with the prefix ی, since there is no other prefix that contains third person or singular. The autonomous structure constraint of Classical and Moroccan Arabic is:

- Imperfect verb person, gender and number categories are obligatorily expressed in one prefix and one suffix.

Two affixes, -ًni and -نا, have disappeared since their meanings are filtered out by stricter application of Economy. ً has disappeared and ٍ has taken over its meaning. One might suggest that an analysis with ً=1SG and ٍ=1 for Classical Arabic would be more appropriate since, under that analysis, after the disappearance of ً, ٍ-automatically takes over the 1SG. However, in such an analysis, the classical Arabic 1.PL would receive a suffix -ًuna, which is now prevented by ‘discontinuous bleeding’. That is, the prefix ٍ=1PL prevents the suffix -ًuna=PL from appearing, because a category may be expressed only once (cf. Noyer 1992).^97 The lack of plural features in prefixes in Moroccan Arabic results in number being uniformly marked by the plural marker, -ٍ. Furthermore, the disappearance of ً results in a system in which, except for the -ٍ suffix, the prefixes and suffixes each refer to a separate set of inflectional categories.

The modal system is radically different in Moroccan, and today only two moods are distinguished instead of three. As in the subject pronominal affixes, in the object affixes reductions have also taken place, and gender is no longer expressed in the plural.

In conclusion, economy ranks higher in Moroccan than in Classical Arabic. There are now more restrictions on expression, particularly of gender and number. Person is still expressed, while aspect, voice, and especially mood are often indicated in quite a different manner.

4.4.2.2 Transparency

Fusion and fission

In Moroccan Arabic two changes have taken place: the categories have a less fused character, and alternation between the PGN affixes has become more important for expressing aspect.

In Classical Arabic the verbal prefix could express person, number and gender, and it was only in combination with a suffix, which expressed gender and number, that full specification took place. In Moroccan Arabic fewer categories are expressed, and meaning computation is more straightforward. The prefix expresses person and gender, while the suffix expresses gender and number. Schematically this can be depicted as follows:

^97 Moreover, this analysis, for theoretical reasons, is unable to assume a singular and not a plural specification.
Classical Arabic: PGN - STEM - GN.
Moroccan Arabic: PG - STEM - GN.

In Moroccan Arabic there is a stronger tendency to reserve one position for one category, and there is less fission. The system is not too far from a system where person and number are separated, and where each has its own slot in the verb template. In fact, in some North African dialects (cf. Versteegh 1984: 89) this tendency has persisted. In those varieties gender is no longer expressed, person is expressed by the prefix, and number by the suffix.

Aspect in Classical Arabic was expressed by internal vowel modification, and triggered allomorphy in the PGN affixes. In Moroccan Arabic the stem internal vowel distinctions marking aspect have nearly disappeared in strong verbs, although vowel alternation in the stem persists in weak verbs with a weak 2nd or 3rd consonant. Therefore, aspect is still expressed in the stem, but in many instances the PGN affixes are more important in expressing aspect.

Homonymy and allomorphy

In Classical Arabic there is only one case of accidental homonymy in the inflectional paradigm, namely between IMPERF.2SG.MASC and IMPERF.3SG.FEM. This homonymy still exists in Moroccan Arabic.

Some reduction in the extent of allomorphy occurred in Moroccan Arabic. In the Fez dialect the passive voice prefix has two allomorphs, \( t- \) and \( tt \), the selection of which is phonologically conditioned (cf. section 4.4.1.2), while in Classical Arabic there were several more intricate patterns of derivation to express passive voice.

In Moroccan Arabic there are still several consonant combinations of the skeleton that trigger deviant affix forms and stem vocalism. However, the number of deviations has decreased, while the deviations that still subsist are less complicated, and more phonologically than morphologically conditioned.

The deviance of verbs with \( C_2=C_3 \) is more uniform, and there is less idiosyncratic variation than in Classical Arabic (cf. 4.2.1.6 and 4.4.1.7). Verbs with a weak \( C_1 \), in contrast to Classical Arabic, do not deviate from the basic pattern. Verbs which have a weak \( C_2 \) were subject to many rules in Classical Arabic, but can now be more summarily described (cf. section 4.4.1.7). Only in the perfect conjugation in Moroccan Arabic are there some deviations for this group of weak verbs. These deviations are however uniform for all weak \( C_2 \) verbs. When the \( C_3 \) consonant is weak some deviation arises (cf. Table 4.22 and Table 4.23), which is, however, far less than the allomorphic variation in Classical Arabic, partly because the weak \( C_3 \) consonant ‘w’ was reanalysed as ‘y’, or, in other words, levelling took place (Versteegh, pers.comm.).

This decrease in allomorphic effects of weak consonants concurs with a decrease of vowel alternation in the stem in general, and thus Moroccan Arabic tends to treat the verb stem with its vowels more as a unified whole than those found in Classical Arabic. While in Classical Arabic there are five patterns by which imperfect and perfect stem vowels are related, in Moroccan, this patterning is largely restricted to weak verbs. Only

\[80\] In verbs with an \( a \) in the imperfect stem, the stem of the third person is invariant.
in a few strong verbs vowel alternation occurs under influence of aspect. In the older pre-Hilal urban dialects in the north no strong verbs display this patterning.

In one respect there is more allomorphy in Moroccan Arabic. In Moroccan Arabic CV syllables, where V is a short vowel, are not allowed, and syllables must always have an onset. This implies that verbs of the form CCVCV(C) are not allowed. Through metathesis, CVCCVCV(C) is preferred. This leads to wide-spread phonologically conditioned allomorphy, e.g. in the perfect conjugation where 1st, 2nd, and 3rd person plural are respectively ktaab-na, ktaab-tu, but, ktaab-u.

In conclusion, there is less allomorphy in Moroccan Arabic. Morphologically conditioned allomorphy has decreased more significantly than phonologically conditioned allomorphy, but, owing to the importance of syllable structure rules, allomorphy is still very much a part of the language.

4.4.2.3 Isomorphy

The ideal order of Arabic inflectional affixes, according to section 2.1.3.2, would be: Verb - Voice - Gobj- Nobj- Pobj - Aspect - Tense - Mood - Gsub- Nsub- Psub.

The order of affixes in Classical Arabic is as given in I., and the order of Moroccan Arabic in II. The brackets indicate that the affix is not obligatory in every context. P, G, N stands respectively for person, gender, and number. SUB means subject, and OBJ object. For the exact distribution of person, gender and number agreement in Moroccan Arabic, see section 4.4.1.4 above.

I. (PsubGsubNsub) - [Verb+Aspect+Voice] - GsubNsub - Mood - (PobjGobjNobj).
II. (Mood) - (PsubGsub) - (Voice) - [Verb+Aspect] - GsubNsub - (PobjGobjNobj).

The order in Moroccan Arabic is different from the order in Classical Arabic, but does not correspond any better to the supposed unmarked order of 2.1.3.2. In fact, Moroccan order is a little worse: voice is expressed outside the verb stem, and aspect fully inside the stem. PGN affixes still intervene between the mood affix and the verb stem, and, the object affixes are still placed further away from the stem than the subject affixes. This latter deviation can be interpreted as an indication for both Arabic varieties that the object affixes must be analysed as clitics. However, since aspect is almost completely expressed in the allomorphy of the PGNsub affixes, it complies fairly well with the Isomorphy Principle.

4.4.2.4 Other Principles

The morphological principles operative in Classical Arabic consisted of position and order templates, cf. 4.2.1.3, and 4.2.2.4. In Moroccan Arabic such principles still operate, since the fused PGN meanings are still spelled out into one or two, and never more than two obligatory positions. In Moroccan Arabic, however, the templates tend not to refer to the inner consonantal and vocalic structure of the verb root. That is, while the templates of Classical Arabic were e.g. [pref]-[vCCvC]-[suff]/_[+imperfect], the templates in Moroccan Arabic are e.g. [pref]-[Stem]-[suff]/_[+imperfect] for strong verbs. With respect to weak verbs, however, the vocalism of the stem still demands reference to the inner structure of the stem.

In 4.4.1.1 I have already discussed some phonological principles. In addition, when assuming an underlying structure in Moroccan Arabic that equals that of Classical
Arabic, then the constraints on syllable structure not only result in metathesis, but also erase many short vowels from the phonological form. Such a derivation from a ‘deep’ Classical Arabic lexicon to a surface Moroccan Arabic phonological form is, however, nothing else than the historical process, guided by the rising of this constraint (cf. Chomsky and Halle 1969). When reanalyzing the Moroccan lexicon on the basis of the output, the underlying short vowels no longer need to be assumed, and the syllable structure constraint mainly leads to metathesis.

4.5 Nubi Arabic

4.5.1 Data

I have used the following sources for the Nubi and Arabic data, Kaye (1976), Boretzky (1988), Owens (1985), Musa-Wellens (1994), Owens (1997), and Wellens (2003). Nubi is the result of a long process in which Arabic was learned as a second language and used as a lingua franca. The emergence of Nubi at the end of the 19th century represents the final but also most rapid phase of this process. Many features that set Nubi apart from Classical Arabic also characterise other Arabic varieties, like the loss of dual number marking on the verb, shared with most north African Arabic varieties. Other features are only shared with the Sudanic Arabic varieties, like the tendency towards open syllable structure. The most important differences with Sudanic colloquial dialects are the loss of geminates and the loss of person, gender, number and aspect distinctions. The features shared should not be strictly related to the unique history of the Nubi speech community, but also to the history of other Arabic varieties. However, the particular selection of these features and the creation of new structures in the 19th century in the Sudanese camps, is characteristic for Nubi and the other pidgins and creoles that arose in the camps. In the following I will mention whether a feature also exists in other related colloquial Arabic varieties, or whether it is a renovation of Nubi. I will not discuss the correspondences between Nubi and the other Arabic pidgins and creoles in Chad and south Sudan (cf. Owens 1997).

4.5.1.1 Phonological preliminaries

Nubi stands out among most Arabic varieties in having lost all geminates. Like many other colloquial forms of Arabic in the region, Nubi has no pharyngalised consonants, and no interdental fricatives. Most long vowels have become short in Nubi, while retaining the same vowel quality. Differences in vowel length are mainly the result of stress, although there are some minimal pairs. As other Arabic varieties in the region, Nubi has five short vowels.

Nubi is unique among Arabic varieties for having contrastive stress and, in a few restricted environments, contrastive tone. Stress falls usually on the same position in Nubi lexical items as in the Arabic lexical counterparts (Wellens 2003: 42). However, the earlier stress-conditioning environment has often changed, thereby making stress assignment unpredictable, and phonemic. For instance, in other Arabic dialects stress is assigned to the first VCC or VVC sequence from the end of the word, yielding *saba* ‘seven’, versus *sabaah* ‘morning’. The corresponding forms in Nubi are, however, *saba*
versus *saba*. A new use of stress is to mark voice.\(^{81}\) Tonal contrasts are also involved in verb nominalisations (Wellens 2003: 43).

Under influence of pharyngalisation vowel harmony is frequent in Arabic varieties. It often occurs in Sudanic varieties, and especially western ones and is also found in Nubi. Nubi, especially the variety spoken in Uganda, has a strong tendency towards an open syllable structure. This feature is also notable in Sudanic Arabic. Nubi carries this tendency much further.

### 4.5.1.2 Augmentations

Nubi has no means to derive verbs from other verbs by modification of the verb’s consonant structure. Some verbs in Nubi are based on augmented verbs in colloquial Arabic. The patterns of augmentation themselves are not, however, present in Nubi.

### 4.5.1.3 Voice

Unlike any other Arabic variety Nubi uses stress assignment and tone to express voice (Wellens 2003: 128ff.). Stress is shifted from the initial to the final syllable of the word to derive passive voice, and in addition high tone is used. In monosyllabic verbs it is only tone that expresses voice. Some verbs that end in a consonant attach a vowel to the last consonant, and form a new syllable that can bear stress and high pitch. An example of passive voice is 2):

1) **Ana**\(\text{a}shru\)bu m\(\text{o}\)yo.
   
   'I drank water.'

2) Ashru\(\text{b}\)u m\(\text{yo}\)yo.
   
   'Water was drunk, someone drank water.'

This construction is not limited to transitive verbs, and nouns are not marked for case. This morphological stress shift and tonal change may be based on substrate languages like Bari (cf. Boretzky 1988: 65ff.). Another explanation is that it is the grammaticalisation of a syntactic topicalisation device, with an accentual change as an initial side-effect (cf. Wellens 2003: 251).

### 4.5.1.4 Tense, mood and aspect

Unlike other Arabic varieties Nubi does not use segmental modifications inside the stem to mark aspect, tense or mood, and neither does it use PGN suffix alternation, since it does not have PGN suffixes.\(^{82}\) Like many modern Arabic varieties Nubi uses grammaticalised preverbs to mark verbal categories. Nubi uses also several modal auxiliaries like *kan*, ‘be’, *gen*, ‘sit’, *gay*, ‘stay’, and *ja*, ‘come’ for temporal, aspectual and modal meanings (cf. Wellens 2003), which, however, I do not discuss here.\(^{83}\)

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\(^{81}\) Recent research on Nubi (Versteegh, pers.comm.) suggests however, that these stress phenomena must in fact be analysed as tonal phenomena.

\(^{82}\) The stressed particle *kan* marks anterior tense, and has a pluperfect meaning, or, with static verbs, a past tense meaning (cf. Musa-Wellens 1994: 41ff.). Its form is derived from a form of Arabic *kana*, ‘to be’. It is a particle and not a prefix since it is not obligatorily linked to the verb.
In Nubi bare verbs refer to the past, except bare verbs that reflect states, mental activity, emotion and possession. These static verbs refer to the present. This may be due to the similarity between the bare stems Nubi has taken over from the lexifier, Arabic, and the perfect stem in Arabic that also usually refers to the past. However, it may also be a result of a universal process of creolisation (cf. Bickerton 1981; Wellens 2003: 154). Bare verbs may also refer to other aspectual and temporal situations, on the condition that this is indicated by the (linguistic) context.

The prefix *gi* is used for marking non-punctuality, that is, progressive or habitual aspect. It usually implies present tense reference, although, again, the context may force another temporal interpretation. It is possibly derived from the auxiliary verb *ga:*id, ‘sit’ used in other Arabic varieties in the region. In Nubi this verb has also non-grammaticalised counterparts, *ge:n*, ‘sit’, and *gai*, ‘stay, remain’. The grammaticalisation into a pre-verb of this particular habitual meaning is unique to Nubi and Juba Arabic.

The prefix *bi-* is used with reference to the future, and it may have irrealis and habitual connotations as well. Boretzky (1988: 60) already noted that *bi* and *gi* are often interchangeable, and extensive research by Wellens (2003: 110ff.) shows that *bi* and *gi* are fully equivalent when expressing habituality. Today the *gi*-marker seems to oust the *bi*-marker. In the rare instances that *bi* occurs with the *gi*-prefix (cf. Boretzky 1988: 62; Wellens 2003: 112), it is attached to this prefix, otherwise it is attached to the stem itself. This form also occurs in other Arabic varieties in the region, with some variation in its meaning (Versteegh 1993: 73).

These two prefixes may also occur with modal verbs. For instance, a combination of *kan*, the anterior marker, and *bi* renders a counterfactual meaning (cf. Musa-Wellens 1994: 48ff.), e.g. in:

3) *kan uwo bi-ashrubu*, ‘he would have drunk’.

The prefixes *bi* and *gi* are sensitive to vowel harmony. The prefix vowel alternates between *i* and *u*, depending on the back/front feature of the first vowel of the stem, e.g. *gi-tunda*, ‘sell’, versus *gu-wonus*, ‘talk’.

### 4.5.1.5 Person, gender and number

There are no PGN affixes, for either the subject, or the object. In some western Sudanic Arabic varieties as well, the singular perfect conjugation have no PGN suffixes (Owens 1985: 232). Instead of affixes, Nubi uses pronouns to express PGN features. For instance, Sudanic Arabic *katab-t-u* ‘wrote-1SG-3SG.MASC’ in Nubi is: *ana katibu de*, ‘I wrote this’.

### 4.5.1.6 Stem classes

Unlike most other Arabic varieties, Nubi has no verb classes. 45% of the Nubi verbs end on a -*u*. This does not, however, trigger alternations elsewhere in the verb. This -*u* may be derived from the Arabic plural marker -*u*, and its wide occurrence may result from the preference of Nubi for open syllable structures (cf. Owens 1985: 254ff. and the discussion in Wellens 2003: 241ff.). According to Versteegh (1984: 124) and Wellens (2003: 100ff.), however, -*u* is derived from the 3SG.MASC suffix and functions as a transitive marker in Nubi.
In rarer instances other morphological categories also occur in frozen form in Nubi verbs, e.g. Nubi *nongusu*, ‘reduce’, from Sudanic Arabic *n-angus-u*, ‘we reduce’. These are, however, part of the undeclinable stem in Nubi.

**4.5.2 Analysis**

To account for the Nubi data the Economy and Transparency Principle play a role.

**4.5.2.1 Economy**

The Arabic derivational augmentation system has disappeared. Several functions of the augmentations are taken over by analytic means; for instance, the causative is expressed with auxiliary verbs. However, new derivational means have also emerged: a suffix *isha*, borrowed from Swahili is used for causativisation (cf. Musa-Wellens 1994: 112).

Most categories disappeared from Nubi, except voice and aspect. The division of the aspectual space in Nubi is different from other Arabic varieties, and more similar to other creole languages. The expression of aspect is also different: a prefix is used, instead of a stem modification with concomitant affix allomorphy. Voice is also expressed in a different way. Nubi uses the aspectual markers in combinations with auxiliaries to express tense, but there is no distinct morphological category of tense in Nubi.

In conclusion, Economy ranks much higher than in other Arabic varieties.

**4.5.2.2 Transparency**

Owing to the radical loss of morphology in Nubi, fusion, homonymy and fission are no longer relevant and allomorphy only plays a minor role. There are no verb classes that trigger allomorphy, and there are very few affixes that display allomorphic tendencies. There is some small variation in the tense and aspect prefixes. This falls partly under allophony, since the variation is predictable on the basis of phonological rules, and no extra allomorphs need to be postulated (cf. Booij 1998). On the other hand, as far as *bi*- and *gi*- have a similar meaning and function, and belong to the same Arabic variety, these prefixes are also allomorphs.

Transparency is much more important in Nubi than in other Arabic varieties. This is partly due to the importance of the Economy Principle. However, the categories that are still expressed display less violations of the Transparency Principle than in other Arabic varieties. In contrast with morphology, in syntax the relation between auxiliary combinations and their semantics is not transparent (Wellens, pers.comm.).

**4.5.2.3 Isomorphy**

The ideal order of affixes is as given in 1., cf. section 2.1.3.2. The order of affixes in Classical Arabic is as given in 2., and the order of Nubi in 3. The brackets indicate that the affix is not obligatory in every context. *P, G, N* stand for person, gender, and number respectively. *SUB* means subject, and OBJ object.

2. (PsubGsubNsub) - [Verb+Aspect+Voice] - GsubNsub - Mood - (PobjGobjNobj).
3. (Tense/Mood) - (Aspect) - [Verb+(Voice)].

The structure and order of affixes in Nubi is rather different from Classical Arabic, and these are not straightforwardly comparable. However, it could be argued that Classical
Arabic displays one more violation of the ideal order than Nubi: Mood appears farther away from the verb stem than the PGN affixes. In Nubi there are no violations with respect to the relative distance of affixes to each other and the stem.

4.5.2.4 Other Principles

Morphological templates do not exist in Nubi. Phonological rules that play a role in other Arabic varieties are absent in Nubi. There is a tendency to avoid closed syllables. This tendency, however, does not seriously affect the transparent structure of Nubi verbs.

4.6 Linguistic and social changes in Arabic

There were several differences amongst Old Arabic dialects (cf. Versteegh 1997: 41ff.). However, these were more insignificant than the differences between for example, Najdi Arabic, and Moroccan Arabic. In Table 4.25 I depict the most important differences between the Arabic varieties under discussion.

Table 4.25 Inflectional changes in Arabic

<table>
<thead>
<tr>
<th>Feature</th>
<th>Classical Arabic</th>
<th>Najdi Arabic</th>
<th>Moroccan Arabic</th>
<th>Nubi</th>
</tr>
</thead>
<tbody>
<tr>
<td>loss of dual and mood</td>
<td>+/-</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>phonological changes</td>
<td>-</td>
<td>x</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>loss of internal passive</td>
<td>-</td>
<td>+/-</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>decrease in stem classes</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>decrease in allomorphy in weak verbs</td>
<td>-</td>
<td>+/-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>loss of gender</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>new prefixes</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>decrease of augmentations</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>tendency towards a uniform stem</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
</tbody>
</table>

In this section I will discuss the factors that may explain this diversity, and will then examine the reasons for these variations.

Substrate influence and dispersion

The various languages with which Arabic came into contact when it spread to North Africa and the Middle East is an important factor. These languages included several Berber languages in the Maghreb, like Tamazight and Tarifit, Coptic in Egypt, and
languages like Aramaic, Syriac, Greek, and Persian in the Middle East. Later the new Arabic varieties also came into close contact with French, English, Spanish and Italian. This diversity in substrates and adstrates is reflected in differences in the borrowed items in the lexicon, and in some phonological and grammatical differences. For instance, when comparing Nubi and Moroccan Arabic, the phonemic use of stress may be a result of Niger-Congo interference in Nubi, while the retention of pharyngeals in Moroccan Arabic can be seen as strengthened by Berber influence. A probleme for substrate theories is however, that many of the alleged substrates are barely known, which makes some of the explanations vacuous (cf. Versteegh 1997: 107).

In addition to the kind of substrate or adstrate influence, the extent of such influence caused diversity among modern Arabic varieties. Nubi had many more second language learners than Moroccan Arabic, while the latter language in its turn had many more second language learners than Najdi. The number of learners roughly corresponds to the number of changes these varieties underwent. Below I will discuss to what extent second language learning led to similar changes between the modern varieties.

Another factor concerns the differences between the old Arabic and new Arabic societies. The old Arabic speech community consisted predominantly of nomads, and only a few cities. The number of speakers in the Old Arabic region was limited and contacts between the various parts of the region were frequent. The region where modern Arabic dialects developed, that is, the Arab world, from Morocco to Oman, is much larger. The number of speakers of modern Arabic has grown to more than 200,000,000 (Grimes 2002). Moreover, in this new Arab world many local centres of prestige arose, with strong local norms. This transition from a relatively small nomadic speech community to a very large sedentary community resulted in more variation. This development can be compared to the situation in South America where Quechua was spoken among a small population that later spread over a larger area. This resulted in them having less contact with each other than before. Although there is nothing in language per se which is a factor for such language change, random variation and the existence of local centres of prestige usually results in more variation (cf. Nettle 1999: 48ff).

Dispersion and different language contact situations have resulted in diversity among modern Arabic varieties. This is hardly surprising when we compare the spread of Arabic to the dispersion of other language families and sub-families like Germanic, Romance, or Tibeto-Burman. What is more surprising is the many similarities between the modern Arabic varieties. For explanation of the similarities, three theories have been proposed. Some authors (Diem 1978; Ferguson 1959) stress the homogeneity, or the tendencies in the original language which resulted in uniformity over a longer period. Later concurrent changes could be a result of universal laws of change applying to an identical source language. Secondly Cohen (1970) and Diem (1978) stress the importance of the mutual influences and contacts which levelled out differences between the Arabic varieties. A third group of factors are the influence of similar social circumstances in the Arabic speech communities after the spread of the Islam. Versteegh (1984) stresses that in the varieties that are structurally close to each other, similar social conditions of language acquisition held. I will now discuss these three explanations.
Common origin

Ferguson (1959) tried to explain the features which distinguish the modern Arabic varieties from Classical Arabic, by proposing a common source, different from the Classical language, from which all modern varieties would have been derived. This common language would have been a military koiné, that is, a dialect of Arabic that emerged in the military camps in northern Arabia at the beginning of the Islamic expansion. This koiné would have been a result of dialect levelling between the various Arabic dialects. To support this hypothesis Ferguson must show that the similarities between the Arabic varieties are not due to features already present in Classical Arabic, or to normal paths of change resulting from the circumstances in which the speech communities found themselves, or, indeed, to later dialect contact and lexical diffusion. Furthermore, these features must be shared only by varieties of Arabic that result from the Islamic spread, that is, not by Bedouin varieties. Ferguson presents fourteen features that fit the bill. This proposal evoked much discussion among Arabists (cf. Cohen 1970; Kaye 1976; Versteegh 1997). Today most scholars reject Ferguson’s hypothesis in its strongest form, which is that there would have been a koiné, locatable in time and space, with specific features. On the other hand, the widespread occurrence of several peculiar changes in Arabic has led most scholars to accept that at least some changes must have taken place in Old Arabic before the Islamic spread.

Among the changes mentioned by Ferguson is the loss of the dual. Dual number marking on verbs has also been lost in Bedouin dialects like Najdi Arabic, and it is even uncertain whether this feature was lost before or after the spread of Islam. Moreover, loss of the dual is common to many languages.

From the perspective of language as a phenomenon in the individual, each change in language must be explained as a modification between input and internal representation, or between representation and output. Furthermore, this modification must be triggered somehow by changes in the context of language use. However, certain changes are common to all languages, but are hard to explain with reference to individual transmission. I call these changes that seem to be intrinsic to language, ‘autonomous developments’. Of course, this is only a metaphor, and it is only a way of saying that we do not know why the change takes place, though on the other hand it is no more circular than explaining such changes by a putative external factor.

Another feature from Ferguson (1959) relevant here is, is the merger of several verb classes with a weak final consonant, which led to less allomorphy in all Arabic varieties. This merger is a development, which also took place in other Semitic languages. Cohen (1970: 111) says: “All these phenomena [i.e. Ferguson’s features] can in reality be considered as a common line of evolution, a tendency of the language, which is realised, as one would expect, in a more rapid rhythm in the sedentary dialects than among the nomads.” This tendency is not common to all languages, and I will not call it an ‘autonomous development’. However, it is a tendency peculiar to most Arabic and perhaps even Semitic languages. Somehow we would prefer to say that the tendency to

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84 This military koiné is not the same as the earlier poetic koiné, as proposed by Zwettler (1978), cf. 4.1.2.
85 “Tous ces phénomènes laissent en réalité apercevoir une ligne d’évolution commune, une tendance de la langue, se réalisant, comme on peut s’y attendre, à un rythme plus rapide chez les sédentaires que chez les nomades.”
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develop in a certain direction was the prerogative of Classical Arabic. Inspired by Sapir (1921), I will call such Arabic-specific tendencies for which there are no other explanations, ‘Arabic drifts’. The same caveats with respect to the explanatory capacity of this term apply as above for the term ‘autonomous development’.

Diem (1978: 131ff.) stresses the homogeneity among the Old Arabic dialects of the nomads to explain the uniformity of contemporary Arabic. Comparable cases with a similar history and with more modern diversity would have already had more internal variation in the original situation. As an example Diem discusses Aramaic whose time depth and history are similar to that found in Arabic, although it is much more diverse at present. According to Diem this can be explained by the higher internal variation already present in Old Aramaic. Though the stress on the original homogeneity can explain similarities between all modern Arabic and Old Arabic, it cannot explain the concurrent changes of many Arabic varieties.

To explain this it is suggested that the Arabic varieties were all subject to the same phonetic laws, which, applying to the same original structure, unsurprisingly yielded a rather similar result. According to this view the loss and merger of several inflectional categories would be preceded by phonetic changes resulting in the loss of vocalic contrasts word-finally, as is also argued for Scandinavian, cf. 5.6. For the loss of the dual, this argument fails, since the dual category is not more susceptible to phonetic erosion than other categories. Moreover, even for the case where phonetic erosion seems most plausible, that is, the loss of the word-final case suffixes -a, -i, and -u, it is argued by Diem (1991), that these categories were lost before phonetic erosion could affect their expression.86 Besides, plural case suffixes do not have short vowel endings but were, nevertheless, lost.

Another argument to explain modern uniformity in terms of the original language structure is that the consonantal roots of Arabic would have prevented restructuring, and would have led the evolution of Arabic in a certain direction. However, Diem (1978: 146ff.) maintains that this same argument should apply to comparable languages like Ethiopian, where thorough changes in the root structure have, nevertheless, taken place.

Dialect contact

In addition to looking for similarities already present in the original language structure and its hidden drifts, Diem (1978) discusses mutual influences between later Arabic varieties as a cause of modern uniformity. Later convergence in Arabic was facilitated by geography: Arabic is spoken in a largely uninterrupted area.87 During the Islamic expansion levelling through dialect contact had already taken place, and in the next centuries contact between speakers from different regions also levelled out many differences. Levelling took place especially during and after large-scale migrations, like the migration of the Banu Hilal to the Maghreb. In addition to these influences through the actual movements of people, there was also a diffusion of varieties which had high

86 Diem (1991) shows this with examples in which the case suffixes were already unsystematically attached, and in which this cannot be due to phonetic erosion, since in these cases final consonantal suffixes follow.

87 The forms of Arabic spoken in regions that are not continuous with the Arab heartland, are indeed strikingly different, cf. the Arabic varieties spoken in Malta and Uzbekistan (cf. Versteegh 1997).
prestige, spreading from cities like Baghdad and Cairo (cf. Diem 1978: 140ff.). In modern times of mass media this latter form of convergence towards large regional koiné’s is leading to a small number of nation-based Arabic varieties, and to the disappearance of many smaller conservative dialects (cf. the emergence of the Riyaadh dialect and the disappearance of Shammar Arabic in 4.1.3.2).

Influence from a pan-Arabic standard is also argued to have led the varieties in a common direction. Versteegh (1984: 30) suggests that the Classical language caused the Arabic varieties to revert from a more analytic stage to a more synthetic stage. If such an influence existed, then the effects would have been more apparent in the cities and in the non-Jewish varieties, where one might expect a higher conformity to the norms of the Classical language. This is not the case, however, and we must concur with Diem (1978) that the influence of the Classical norm has been minimal. However, the feeling of belonging to one large speech community with shared language, religious and cultural values, may have played a role, albeit indirectly. Cohen (1970: 124) says:

“But in addition to centrifugal factors, other unifying and very strong factors have been exercised: namely those which are associated with a common religion, with the influence of the sacred text, with sentiments of belonging to a cultural community, that were stronger or less strong during the ages, but which was never fully absent.”

Similar social conditions

Long-lasting processes of mutual influence and levelling can explain the spread of several features, the absence of clear isoglosses, and the difficulties in relating modern Arabic varieties to dialects of Old Arabic. It cannot explain, however, why there are structural similarities between Arabic varieties, which cannot be due to plain borrowing and levelling between lexical items. An example is the replacement of a synthetic genitive construction by an analytical possessive construction, where the new possessive marker has different forms in different varieties (cf. Versteegh 1997: 107). Another example is the loss of the word-final modal markers and the emergence of grammaticalised prefixes, whose actual form is different between different Arabic varieties. Similar processes without the same lexical substance are difficult to explain by contact, since one would then expect specific words, phrases and affixes to be shared. Two kinds of explanation have been given, both focussing on the differences between the earlier nomadic society in which Arabic was spoken, and the later sedentary situation in which Arabic flourished after the Islamic expansion.

The first explanation is that in sedentary communities a different use is made of language. Taine-Cheikh (2000) suggests that the conditions of language use are so different in nomadic societies that this affects the structural level:

“The nomads, where the variety of experiences and the cultural heterogeneity are, without doubt, smaller, seem to be able to be permanently satisfied with implicitness…On the

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88 “Mais à côté des facteurs centrifuges, d’autres facteurs, unificateurs, et très puissants se sont exercés: ceux qui sont en dépendance de la commune religion, de l’influence du texte sacré, du sentiment plus ou moins fort selon les époques, mais jamais entièrement éteint, de l’appartenance à une communauté culturelle.”
other hand, the innovations observed among the sedentary speeches often reflect a need for explication of the content of syntactic relations, like referential or modal notions.\textsuperscript{89}

In this view the emergence of grammaticalised modal markers would be due to urban life and needs no further explanation from a common source, or from dialect contact. Perkins (1992) argues that in small societies with few institutions and little contact above the extended family level or clan level - which Perkins calls ‘non-complex cultures’, cf. section 2.3 - language is based on different kinds of discourse to those found in urban speech. This would have repercussions for the architecture of the grammatical and morphological system. Perkins shows that the more complex a society is, the fewer deictic categories it has. For instance, the dual is a category especially found in small societies. Perkins (1992) makes this claim on the basis of correlations between cultural factors and grammatical factors. However, such a general claim needs more substantiation in the Arabic case. First of all, it does not explain the decrease of allomorphy caused by weak verbs, which took place throughout the Arab world and not only in urban environments. Moreover, Taine-Cheikh’s argument that nomadic discourse is more implicit may well concur with the smaller amount of modal distinctions in Bedouin Arabic varieties, but the relation between this implicitness and the higher amount of deictic expressions as observed by Perkins remains unclear.

Versteegh (1984) gives a more elaborate explanation for the differences between urban and nomadic speech. He focuses on the specific social circumstances in the cities where after the Islamic expansion Arabic became the lingua franca. Arabic was learned by the native population in an untutored acquisition process. Since the number of native speakers was far less than the number of learners, the acquisition process was imperfect. Versteegh named this process ‘pidginisation’, which was perhaps a little inapt, since no indications have been found that there ever really was a pidgin. However, when we take ‘pidginisation’ to refer to a process of massive untutored imperfect second language acquisition, as Versteegh indeed intended, and not to a specific result, then Versteegh’s hypothesis becomes quite attractive. The structurally similar changes given above can be explained by such an hypothesis; second language learners prefer analytic structures, which concurs with the increase in analyticity in the sedentary varieties. The variation in the lexical form of these analytic structures is due to the substrate languages, and to accidental choices of the learners. Three related questions remain, however. To what extent did this process of second language learning influence the direction of change? Second, why would Arabic later have changed its direction of development towards a less pidginised state? And third, what features of Arabic morphology can be accounted for in this scenario?

According to Versteegh (1984) considerable changes took place in Arabic. When comparing the modern state of syntheticity in Arabic varieties with Classical Arabic, Versteegh (1984) in fact proposes that between these two relatively high levels of syntheticity a much lower level must have existed, of a kind of pidgin Arabic. I call this the Curve scenario, since it proposes that the syntheticity level lowered and rose again. In

\textsuperscript{89} “Chez les nomades, où la variété des expériences et l’hétérogénéité culturelle sont sans doute moindres, on semble pouvoir s’accommoder d’une permanence plus grande de l’implicité….À l’inverse, les innovations observées dans les parlers de sédentaires répondent souvent à un besoin d’explication du contenu des rapports syntaxiques, qu’il s’agisse de notions référentielles ou modales…”
contrast, in what I call the Linear scenario, no such intermediate lower stage is proposed. In this scenario, modern Arabic varieties are drifting further away from the Classical norm, either because this norm was and is not considered to apply to everyday speech, or because the norm was and is inaccessible for ordinary speakers.

The Curve scenario in its strongest form is hard to prove. First of all, there are no sources that make mention of an Arabic pidgin after the spread of Islam. Second, indirect evidence for such a pidgin can also be explained otherwise. For example, the parallel emergence of analytical genitive constructions do not presuppose a previous pidgin stage. It implies at most parallel processes of imperfect second language acquisition. Third, when the modern Arabic varieties could be a result of decreolisation caused by the influence of Classical Arabic, it is supposed that the Classical language had considerable influence in all regions of the Arab world. How much access there was to the Classical language remains a disputed question, however, because of a lack of data. Furthermore there is no correlation between religious identity and deviation from Classical Arabic. That is, Judaic Arabic varieties are no closer to a supposed pidgin stage than other related varieties. This would, however, be expected if the Curve scenario in its strongest form was true (cf. Diem 1978), since Judaic speech, lacking Islamic norms and values, would diverge more rapidly from the Classical norm.

On the other hand, less radical versions of the Curve scenario are in fact quite plausible. There are several indications that the development from Classical Arabic to modern Arabic varieties was not a linear development, but that there had been stages where Arabic varieties were more ‘pidginised’, in the sense of ‘influenced by second language acquisition’. In Morocco the city dialects which emerged after the first wave of Arab immigrants are more distant from Classical Arabic structure, in having no distinction between imperfect and perfect strong verb stems. That is, in these varieties the vocalism of the stem that expressed aspect and voice in Classical Arabic completely reduced to schwa. In more modern Moroccan Arabic varieties, that emerged after contact with new immigrants, such distinctions have been re-introduced (cf. Versteegh 1997: 112). A second example of a change towards, instead of away from the Classical language is discussed by Versteegh (1993). Nubi Arabic has a closely related variety in Sudan, Juba Arabic. In this Sudanese variety decreolisation processes take place in which personal prefixes are introduced again (Versteegh 1993: 74). A potential argument against the Curve scenario, that says that the inflectional structure of Arabic is too complex to be reintroduced in a decreolisation process, is at least falsified by the example from Juba Arabic (cf. also Versteegh 2001: 487ff., for suggestions that an Arabic pidgin left traces in Swahili as well). Third, nowadays Standard and Classical Arabic have profound influence on the colloquial varieties. Although today there is more communication and more access to the standard, in earlier days there was probably at least some influence from the Classical prestige language. These three examples suggest that a bend in the curve is possible. How much curve there was exactly is unknown, because of a lack of data. Now I will turn to specific features of Arabic morphology.

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90 That is, they do not deviate more than other urban pre-Hilal dialects in Northern Morocco. As a group these dialects differ more from Classical Arabic than the modern Moroccan Koiné.
Loss of dual and mood suffixes

Loss of dual number and mood suffixes occurred in all Arabic varieties, including isolated varieties like Najdi Arabic. In the dialect from which all modern Arabic varieties descended erosion must have already set in (cf. 4.1.2). Otherwise these losses must be due to Arabic drift (see above). This is possible assuming a general tendency towards avoidance of too much complexity. Perhaps by some idiosyncratic language development Arabic had reached such a level of inflectional complexity, that only a little time and some random variation was needed before some simplification would start. This scenario is comparable to the scenario sketched above for Scandinavian (cf. also Werner 1984). In Old Norse, because of some earlier assimilation and conflation processes, the earlier agglutinative structure of Germanic had evolved into a fairly opaque system. Only very small disturbances in language transmission were needed to filter out the most extreme complexities, even in the most isolated Scandinavian language, Icelandic. Applying this scenario to Arabic implies that Old Arabic was an unstable language which could change at any moment. As in Scandinavian this process was more than a purely phonetically driven one; early loss of mood suffixes occurred in forms where erosion could not take place (cf. Diem 1991 and note 86). The prominence of loss of dual and mood in many Arabic varieties corresponds with data from Mansouri (2000: 177ff.), who found that the dual and mood are among the most difficult morphological devices for L2 learners of Standard Arabic.

Loss of the internal passive

A similar argument applies to the loss of the internal passive. The internal passive has been lost in most varieties, including several of the Bedouin varieties. In Mesopotamia and Saudi Arabia the loss of the internal passive is accompanied by phonological rules that affect vowel quality dependent on syllable structure (cf. Ingham 1982: 45ff.). The loss of the passive is, however, not a mechanical result of these phonological rules, since these are initially sensitive to particular morphological environments. Therefore on the one hand, the loss of the passive is a result of the phonological make-up of Arabic structure, but, on the other hand, morphological considerations of a universal nature have guided the manner in which the passive was lost (cf.4.3.2.2). Moreover, since the internal passive is retained in the more isolated Bedouin dialects, convergence and contact with other Arabic varieties may have been involved.

Berman (1985: 323ff.) found that the internal passive in related modern Hebrew is acquired only after the age of 8 or 10 by L1 learners, and explains this by their low frequency, the existence of periphrastic alternatives and their morphological markedness. These three factors may account also for the loss of the internal passive in most Arabic varieties, and may explain why this loss is largely driven by language-internal factors, independent from language contact.

Decrease in stem classes

In all Arabic varieties the number of ways of stem vowel alternation between perfect and imperfect stems decreased. In Najdi Arabic this resulted in two classes, while in the post-Hilal varieties of Morocco there is only one stem class, with some exceptions. Strong verbs in the pre-Hilal varieties of Morocco and all verbs in Nubi appear in only one stem class. Like the loss of the internal passive, this seems to be an autonomous development in the sense that the development is not restricted to varieties with a specific substrate, or
with specific social circumstances. The increasing tendency towards the abolition of stem classes in varieties which underwent more language contact implies that the speed of disappearance is associated with social factors.

**Loss of gender**

In the 2\textsuperscript{nd} and 3\textsuperscript{rd} plural and in the 2\textsuperscript{nd} singular perfect gender distinctions were lost in sedentary varieties, but not in Bedouin varieties. Because of the sharp split between Bedouin and sedentary varieties with respect to these features, this does not seem to be an autonomous development. Perhaps there was a dominant dialect in the first Arab spread during which most sedentary varieties developed, and perhaps in this variety gender had already been lost. Otherwise the explanation for this development must lie in identical circumstances in the cities: second language acquisition processes (cf. Versteegh 1984), or discourse conditions in urban contexts (cf. Taine-Cheikh 2001). Processes of convergence can also have played a role.

**New mood prefixes**

In the sedentary varieties former aspectual and modal distinctions were replaced by preverbs which grammaticalised into prefixes. Like the loss of gender this cannot be due to substrate influence since it took place in all sedentary varieties in the Arab world. It cannot be due to an original structure of an early Arabic dialect either, or to convergence, because the replacement by prefixes proceeded in a structurally similar fashion in Arabic varieties, but its lexical expression is different. This development is the most probable candidate for causation by parallel social conditions in the cities.

**Decrease in allomorphy**

In Classical Arabic there was much allomorphy induced by two weak consonants that could appear in three places in the root, and that triggered different effects depending on the surrounding vowels, and on morphological properties of the word in question. This allomorphy was reduced significantly in the varieties that experienced most language contact. Its disappearance seems to be an independent autonomous development, specific to Arabic, and tending towards more transparency. Its different rates of change were at least partly dependent on the social history of the variety in question.

The partial independence of weak verb allomorphy decrease from external factors is in line with data from Hebrew acquisition. Berman (1985: 282, 285) found that L1 learners of modern Hebrew have also severe difficulties in acquiring the morphologically conditioned rules of weak verb allomorphy. When both L1 and L2 learners have such difficulties, it suggests that there is a pressure to change in both contact and non-contact Arabic varieties.

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91 This development can be considered as a universal ‘natural development’, when it is taken as an implementation of a universal tendency towards less allomorphy. It may, however, be a part of Arabic or Semitic drift, since these specific changes only occur in Arabic, or Semitic.

92 There is a tendency in acquisition to omit person, gender and number agreement in verb-initial sentences (cf. Berman 1985: 301 for Hebrew; Mansouri 2000: 168ff. for L2 acquisition of Standard Arabic). However, this pattern of loss does not correlate with the more specific gender loss discussed here.
Linguistic and social changes in Arabic

Loss of augmentations
The loss of specific patterns in the lexicon stems partly from the already infrequent use of some of these in Old Arabic. The process of loss affects all varieties, and can be considered as an instance of ‘Arabic drift’. However, the augmentation system decreases more in the regions that lie further away from the Arab heartland, and that saw most contact. For instance, in Morocco only pattern 5 is used for the passive. In Egypt pattern 8 is also used, and on the Arabian Peninsula pattern 7 is used in addition to the others.

Uniform expression of the stem
When summarising all developments in Arabic we find a tendency towards a uniform expression of the stem. In Classical Arabic infixation of vowels and consonants is a common process. In modern Arabic varieties the functional load of processes internal to the stem has diminished. In the Mesopotamian dialects the stem vowels are defined more by phonological considerations than in Old Arabic. In Moroccan Arabic less phonological variation is possible inside the verbal stem and passive voice and aspect are expressed largely outside the stem. In Nubi the stem is invariant. Since this tendency seems to hold in all Arabic varieties, it may be part of Arabic drift. In addition, it is also an instance of the universal tendency towards more transparency. The speed of this change is influenced by the social processes in the cities, the structure of the substrate languages, and convergence towards other varieties.

Phonological changes
A final change in modern Arabic concerns phonology. Although phonology itself is not the subject here, some of the phonological changes also affected the verbal inflection. The phonology of the modern Arabic varieties differ and this is partly due to substrate influences. For instance, the phonemic /ny, [ṇ] in IPA, in Nubi is probably caused by an identical phoneme in a Niger-Congo language. Other phenomena, like the spread of vowel harmony across both Najdi Arabic, Sudanic Arabic, and Nubi, may be due to substrate influence, but perhaps also to convergence. Perhaps it is a development specific to Arabic. Other phonological developments like the loss of the marked interdentals in sedentary varieties may be due to the early ‘pidginisation’ processes in the cities. One striking feature of modern Arabic, especially of North Africa, is the shift towards a system of strong stress. For example, stress in Moroccan Arabic is always on a heavy syllable, containing at least a long vowel or a final consonant, while unstressed syllables are reduced with respect to vocalic contrasts and length. This is reminiscent of the stress shift in Germanic that also concurred with social processes on the one hand, and erosion of vowel quantity and quality on the other hand.

In Table 4.26 the factors in the columns are related to the kinds of changes in the rows. X means that the factors are closely related, and x that there is a weak relation. With ‘Arabic development’ as a factor of change, I refer to the specific structure of Arabic, or of a supposed Arabic variety. With ‘social process’ I refer both to the influence of city life in general, as well as to the processes of second language acquisition.
Table 4.26 Inflectional changes and sociolinguistic processes in Arabic

<table>
<thead>
<tr>
<th>loss of dual and mood</th>
<th>autonomous development</th>
<th>Arabic development</th>
<th>substrate influence</th>
<th>convergence</th>
<th>social process</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>loss of internal passive</td>
<td>X</td>
<td>X</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>decrease in stem classes</td>
<td>X</td>
<td>X</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>loss of gender</td>
<td>x</td>
<td>x</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>new prefixes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>decrease in allomorphy in weak verbs</td>
<td>X</td>
<td>X</td>
<td></td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>decrease of augmentations</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>tendency towards a uniform stem</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>phonological changes</td>
<td>x</td>
<td>x</td>
<td>X</td>
<td>x</td>
<td>X</td>
</tr>
</tbody>
</table>

Of course Table 4.26 gives only a rough and fairly abstract indication of the changes in all the Arabic varieties in a period of more than a millennium. When considering actual changes in particular varieties, it appears to be more difficult to classify phenomena with respect to their distance to Classical Arabic (cf. Taine-Cheikh 1983: 95), and to relate the changes to various factors. However, the bird’s eye perspective may spot broad tendencies which are not visible from within a more detailed perspective. Thus when we combine Table 4.25 and Table 4.26, we can tentatively compose a table which displays the factors that influenced each variety.

Table 4.27 Sociolinguistic factors in Arabic

In each block of this table I weighed +/- as 1, x as 2, and X as 3 for Table 4.25, and I multiplied these with x=2, and X=3 of Table 4.26.

<table>
<thead>
<tr>
<th></th>
<th>autonomous development</th>
<th>Arabic development</th>
<th>substrate influence</th>
<th>convergence</th>
<th>social process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical Arabic</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Najdi Arabic</td>
<td>25</td>
<td>22</td>
<td>6</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Moroccan Arabic</td>
<td>42</td>
<td>45</td>
<td>13</td>
<td>28</td>
<td>41</td>
</tr>
<tr>
<td>Nubi</td>
<td>51</td>
<td>57</td>
<td>15</td>
<td>36</td>
<td>57</td>
</tr>
</tbody>
</table>

This quantification is obviously a rather haphazard way of displaying the data. Nevertheless, some trends are apparent.
In Classical Arabic there are, by definition, only tendencies to change through autonomous development and through developments intrinsic to Arabic. Furthermore, autonomous and intrinsically Arabic developments are also important in the three other varieties, while the influence of substrate languages is less important in Arabic inflectional change. In addition, in two respects the three other varieties differ.

First of all, convergence as a factor in inflectional change is unimportant in Najdi, while it is much more so in Moroccan and Nubi. This corresponds to the observation that the Najdi language and society were largely unaffected by other Arab societies and varieties, while Moroccan Arabic was in constant contact with other forms of the language. Although Nubi was isolated for a while as well, before its formative period, when it still consisted of Egyptian and Sudanese Colloquial Arabic, it also came into contact with other Arabic varieties.

Secondly, the factor “social process”, which stands for the influence of city life and 2nd language acquisition, is minimally important in Najdi, but rises to the highest place in Nubi. This is unsurprising, considering that Nubi was created by second language learners while in Najdi there were no non-native speakers, and there was hardly any urbanisation. To a lesser extent than in Nubi though, 2nd language acquisition and urbanisation played a role in Morocco as well.

Thus, from Table 4.27 we may conclude that Classical Arabic and Najdi Arabic inflectional change is mainly autonomous and typically Arabic, while for Moroccan and Nubi Arabic external factors are needed to explain inflectional change.

4.7 Arabic changes from the perspective of Optimality Theory

4.7.1 Introduction

Some aspects of variation in Arabic inflection can be profitably analysed in the framework of Optimality Theory. There is variation in infixal expression of aspect and voice, especially in Najdi Arabic. Furthermore, affixal possibilities vary, and the loss of fusion has had profound effects in Moroccan and North African Arabic. Two main themes that recur are the interaction between reranking of phonological and morphological constraints, and the relation between constraint reranking and the lexicon. However, first several constraints that play a role in Classical and modern Arabic varieties need further introduction.

Apart from constraints that account for the correct augmentational structure, the make-up of the core of the verb in Classical Arabic is determined by high-ranking Faith(Voice) and Faith(Aspect) constraints. The categories of voice and aspect are both expressed by vowels inserted into the CV-structure as demanded by the verb and its augmentation.

Faith(Voice) demands that voice is expressed in the Output, and LEX demands that this takes place with help of a lexical item from the lexicon (cf. section 3.3.1). In the lexicon active voice is expressed as: [ACTIVE; aV], in which V is a variable whose value depends on aspect. Passive voice is expressed as [PASSIVE; aV].

Faith(Aspect) demands that aspect is expressed in the Output. The lexical items that express aspect are fairly complex, namely, informally stated: [PERFECTIVE; Vαι & AUG],

93 The seemingly accidental constraints on basic verb patterns in Arabic is dealt with in McCarthy (2001).
or [IMPERFECTIVE; Va/i & v-AUG]. High ranking of Faith(Aspect) leads, in combination with LEX, to rather opaque expressions. Imperfective aspect demands an a, or i as second vowel, and an extension of the augmented pattern with a prefixed vowel. The choice between a and i is conditioned by the transitivity class of the verb, voice and on the kind of augmentation of the verb in question (cf. section 4.2.1.1). How the skeleton is precisely filled is another matter. I assume some version of prosodic morphology as discussed in McCarthy (1982) to be compatible with my approach.

The correspondence constraints Faith(Voice) and Faith(Aspect) each consist of two constraints, Max(X), and Dep(X), depending in what direction the correspondence is evaluated (cf. section 3.3.3). Other constraints that deal with semantic categories are markedness constraints like *[Dual], and *[Gender, Plur], and contiguity constraints. These latter constraints forbid infixation within a certain domain. Con(Stem), for example forbids infixation inside the stem, and Con(Affix) forbids intervention within affixes, and in fact forbids circumfixes. These contiguity constraints belong to the family of faithfulness constraints (cf. Kager 1999: 250).

Furthermore, there are constraints that demand full expression of the categories gender, number, person, mood, Max(Gen), Max(Pers), Max(Num), and Max(Mood), and secondly their counterparts that forbid these categories, the so-called filters. Examples are *[Dual], or *[Gen, Plur]. Finally, there are two other correspondence constraints applying to morphology, which are the OT counterparts of the Elsewhere or Panini Principle, and the so-called Hierarchy Principle:

**Max(Cat):** “A candidate with an affix that has features a and b is preferred above a candidate expressing only b, that is a more specified form is preferred above a less specified form.”

**Max(High):** “A candidate with affixes that have features that are high on the feature hierarchy is preferred above a candidate with lower features.”

In section 4.2.1.3 I showed why these two constraints are needed to avoid underspecifications and other wrong forms in Arabic. These two constraints must be ranked high in Classical Arabic, above the other faithfulness and markedness constraints. In the next section I discuss some further phonological constraints.

### 4.7.2 The fate of Arabic infixation

Root vocalism has undergone considerable changes in its development from Classical Arabic to Najdi Arabic, Mesopotamian Arabic, Moroccan Arabic, and Nubi Arabic.

#### 4.7.2.1 Classical Arabic

In Classical Arabic, the correspondence constraints, Faith(Voice) and Faith(Aspect), are ranked high. In all verb classes both imperfective and perfective aspect and passive and active voice are expressed distinctively in all combinations. Constraints ranked low in Classical Arabic are morphological markedness constraints like *[Intransitive, Imperfect, Voice], and the contiguity constraint Con(Stem). These latter constraints have been promoted in modern Arabic varieties. On the basis of Classical Arabic we conceive that
Faith(Asp) and Faith(Voice) are ranked higher than the markedness constraints. We do not know what the internal ranking of constraints within these two groups of constraints is, since they never conflict, cf. Figure 4.3 (For further explanation of this diagram, cf. section 3.2).

Figure 4.3 Dominance relations of voice and aspect constraints in Classical Arabic

Constraints whose mutual order is questionable are separated in the tableaux with dotted lines. For the sake of comparison with other Arabic varieties I have subsumed several markedness constraints in the next discussion. In Tableau 4.1 the high-ranking faithfulness constraints prevent all kinds of reductions. For reasons of clarity I do not display all constraints; but focus on the fate of the vowels in the stem, which are printed in bold letters. Categories in capitals are unexpressed categories.

Tableau 4.1 Input: Classical Arabic t-?-sr-?-b-na, ‘drink’ INT.IMP.ACT.2FEM.PL

|--------|------------|--------------|---------------------|-------------------|----------|--------|--------|
| tašrabna INT.IMP.ACT | ! | * | * | * | * | * | *
| tušrabna INT.IMP.PASS | * | * | * | * | * | * | *
| tašrabna INT.(ASP, VOI) | * | * | * | * | * | * | *
| tašrabna INT.(ASP, VOI) | * | * | * | * | * | * | *

Tableau 4.1 shows that in Classical Arabic aspect and voice must always be expressed in the stem. It does not, however, show whether phonological deviations from tašrabna, like tisribna, or tašrabna are allowed. To decide between phonological variants we need the following phonological constraints:

**Faith(C)** means that consonants in the Input must correspond to consonants in the Output.

**Faith(V)** means that vowels in the Input must correspond to vowels in the Output.

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94 The faithfulness constraint that protects the expression of verb class is also ranked high. Its erosion runs parallel with the disappearanece of voice and aspect infixes, which I will not discuss further.
In Arabic there is a vocality hierarchy \(a>i>u>\emptyset\), which also plays a role in weak class verb allomorphy, cf. section 4.2.1.6. This hierarchy plays also a role in Scandinavian (cf. section 5.7.1). It claims that there is a ranking of gradation of vocality from \(a\) to \(i\) to \(u\) to \(\emptyset\), and that adjacent vowels on the hierarchy are ‘closer’ to each other than e.g. \(a\) and \(u\).

\(\text{Sim}(V)\) depends on this hierarchy when it demands that vowels in the Output must be approximately similar to the vowels of the input. That is, vowels may not deviate more than one ‘step’ on the vocality hierarchy. Therefore, when the hierarchy is \(a>i>u>\emptyset\), then \(\text{Sim}(V)\) excludes \(a\)- and \(i\)-deletions. In Najdi Arabic, where the hierarchy consists of \(a>i>\emptyset\), the constraint only forbids \(a\)-deletions. \(\text{Sim}(V)\) is a weaker form of Faith(V), since it permits more variation between Input and Output than Faith(V). *

\((.CV.C)\) forbids non-final open CV-syllables. This constraint may look quite odd, because in most languages CV is the unmarked syllable type, and there are no languages without any open syllable. However, a constraint that forbids CV is necessary in Arabic. For this purpose Broselow (1979) proposes the i-syncope rule, \([-\text{stress}, +i] \rightarrow a / CV\) in rule-based grammar. In the OT model Kager (1999: 283) proposes a constraint No \(i\). In a footnote Kager (1999: 283) suggests decomposing No \(i\), and a similar constraint No \(a\), which I would need as well, into a general constraint *\(\sigma\), which would forbid monomoraic syllables. This would, however, still be a proposal for a constraint hardly likely to be universal. In my analysis here an open syllable with an \(a\) counts as a double violation, and an open syllable with an \(i\) as a single violation of *(.CV.C). This is related to the vocality hierarchy.

*(.CV.CV.C) says that a sequence of two open syllables of the form CV is not allowed. This constraint is a more specific variant of *(.CV.C).

\(V_2 \rightarrow V_1\) says that it is more important to preserve faithfulness in the \(V_2\) of the verb stem than in the \(V_1\). This may also look like an odd constraint, because it compares two faithfulness relations. In the OT literature, however, analogous constraints have been proposed to account for phenomena that are sensitive to the position in the word. Kager (1999: 408ff.) discusses positional faithfulness, which is used to account for differences in restrictions on faithfulness deviations between positions, which is what we are dealing with here as well. Another solution is to decompose \(V_2 \rightarrow V_1\) into other constraints like *CCC, which forbids really heavy consonant clusters, and some form of OO-constraint (cf. section 3.3.3.3) that demands correspondence between \(V_2\) in the candidate form and \(V_2\) in paradigmatically related forms where it cannot be deleted (cf. McCarthy 2001).

These constraints together have the same effects as the phonological rules of section 4.3.1.1, i.e. CiC, CaC, and the Short Vowel Raising Rule. The effects of other rules, like the Guttural Rule, will not be discussed and I only focus on the stem vowels, leaving Faith(C) out of consideration.

In Classical Arabic Faith(V) is, just like several morphological faithfulness constraints, ranked above the markedness constraints, *(.CV.C), and *(.CV.CV.C). The rankings of \(V_2 \rightarrow V_1\) and \(\text{Sim}(V)\) in Classical Arabic cannot be determined because if these constraints are violated Faith(V) is fatally violated as well. On the other hand, when they are not violated, it still depends on the violation of Faith(V) whether the candidate is selected. These two constraints, which I call floating (cf. section 3.4), can be ordered anywhere in the constraint ranking in Classical Arabic. The positions of *(.CV.CV.C) and *(.CV.C) are also undetermined with respect to each other, since Faith(V) never leaves any choice
between candidates. That is, there are no instances that only differ in violations of *(.CV.CV.C) and *(.CV.C). This results in the following order: Faith(V) >> *(.CV.CV.C)//*(.CV.C).

Table 4.2 shows the high ranking of Faith(V) and the unspecified position of *(.CV.CV.C) and *(.CV.C).

### 4.7.2.2 Modern Arabic

In modern Arabic, that is, all Arabic varieties derived from Classical Arabic, phonological markedness constraints have been promoted which, in many varieties, lead to a reranking of the morphological constraints as well.

In the variety close to Classical Arabic, the conservative Shammar variety of Najdi Arabic, only the phonological ranking has changed: the markedness constraints *(.CV.CV.C) and *(.CV.C) have risen above Faith(V), and the floating constraints Sim(V) and V₂\rightarrow V₁ have become important in selecting the optimal candidate. Sim(V) restricts too wide an application of *(.CV.C). The constraint V₂\rightarrow V₁ is ranked higher than *ComplexOnset (*ComOns), which forbids consonant clusters in the onset, cf. Figure 4.4.

In Tableau 4.3 the optimal candidate sirabti above srabti shows that Sim(V) ranks higher than *(.CV.C), and sirabti instead of sarabti shows that *(.CV.C) is ranked higher than Faith(V).

### Figure 4.4 Phonological dominance relations in Shammar Najdi Arabic

In Tableau 4.3 the optimal candidate sirabti above srabti shows that Sim(V) ranks higher than *(.CV.C), and sirabti instead of sarabti shows that *(.CV.C) is ranked higher than Faith(V).

### Tableau 4.4 Input: Shammar Najdi Arabic ś-a-r-a-b-ti INTR.IMP.ACT.2FEM.SG

<table>
<thead>
<tr>
<th></th>
<th>*(.CV.CV.C)</th>
<th>Sim(V)</th>
<th>*(.CV.C)</th>
<th>Faith(V)</th>
<th>V₂\rightarrow V₁</th>
<th>*ComOns</th>
</tr>
</thead>
<tbody>
<tr>
<td>ărabti</td>
<td>**!</td>
<td></td>
<td>*</td>
<td>!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>şarabti</td>
<td></td>
<td></td>
<td></td>
<td>V₂\rightarrow V₁</td>
<td></td>
<td>*ComOns</td>
</tr>
<tr>
<td>şabti</td>
<td>**!</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The constraint V₂\rightarrow V₁ is ranked above *ComOns because skanat is preferred above saknat in Tableau 4.4. The preference of skanat above saknat shows that *(.CV.CV.C) is ranked higher than Sim(V).
The mutual ordering of Faith(V) and V₂ cannot be decided, because there are no instances where Faith(V) is not violated while V₂ is violated. Tableau 4.5 shows that *(.CV.CV.C) is ranked higher than V₂.

In comparison with Classical Arabic the Shammar variety of Najdi Arabic differs in the promotion of several phonological constraints. In Table 4.28 I show the variation and opaqueness in Shammar Najdi Arabic expressions.

<table>
<thead>
<tr>
<th>Class. Arabic</th>
<th>Najdi Ar.</th>
<th>Surface vowel forms in Shammar Najdi Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans. Active Perfect</td>
<td>a-a</td>
<td>(i-a, o-a)</td>
</tr>
<tr>
<td>Trans. Active Imperfect</td>
<td>a-i/u</td>
<td>(a-i, a- ø)</td>
</tr>
<tr>
<td>Trans. Passive Perfect</td>
<td>u-i</td>
<td>(0 - i, i- ø)</td>
</tr>
<tr>
<td>Trans. Passive Imperfect</td>
<td>u-a</td>
<td>(a-a, i-a, i-i)</td>
</tr>
<tr>
<td>Intrans. Active Perfect</td>
<td>a-i</td>
<td>(i-i, a- ø)</td>
</tr>
<tr>
<td>Intrans. Active Imperfect</td>
<td>a-a</td>
<td>(a-a, a-i)</td>
</tr>
<tr>
<td>Intrans. Passive Perfect</td>
<td>i-i</td>
<td>(i-i, i-ø)</td>
</tr>
<tr>
<td>Intrans. Passive Imperfect</td>
<td>i-a</td>
<td>(a-a, i-a, i-i)</td>
</tr>
</tbody>
</table>

On the one hand the underlying system in Shammar Najdi Arabic is simpler because u and i have merged and there is less variation. However, because of the higher ranked phonological markedness constraints, the eight semantic possibilities based on the three parameters of transitivity, voice and aspect are no longer expressed transparently. In Najdi Arabic the surface forms differ more from the underlying form than in Classical Arabic.

This opaqueness led to the collapse of the infixal system in those varieties with more characteristics of a Type 2 community, and which were further away from the Najdi heartland (cf. Ingham 1982: 40ff.). The first signs of break-down are apparent from dialects spoken by some speakers of Shammar and surrounding groups, like the Sudair, where the intransitive imperfect no longer distinguishes voice in its phonological form. Forms like tasrab INTRANS.IMPERF.ACT are replaced by their passive counterpart tiṣrab, INTRANS.IMPERF.PASS. In OT terms we can describe this process as follows.

The promotion of the phonological markedness constraints *(.CV.CV.C) and *(.CV.C) implies that phonological faithfulness is violated more often, and that the relation between lexical forms and their expression becomes more opaque, since the expression
has become more dependent on phonological context. As a result, speakers apparently no longer express this relationship consistently. At first the relationship becomes difficult in forms with low frequency. In Sudair Najdi Arabic speakers no longer specify in the intransitive imperfective whether a verb form has an active or passive meaning. The voice specification must now instead be deduced from the context (cf. Ingham 1982: 46). The lexical form of ‘passive voice’ itself has not been lost, since the passive voice lexeme [\textsc{passive}; \textit{iV}] is still present in other forms. However, we do not see this lexeme appear again in the specific context of ‘intransitive, imperfective’. Apparently, in this specific context speakers do not want, or are not able to, express voice anymore. That is, Najdi language users, or language learners, have refrained from trying to express this specific lexeme in the context of the imperfective intransitive. In OT terms: Faith(Voice) is reranked below *[\textsc{Intr, Imp, Voice}], while the lexeme itself remains in the lexicon.

In earlier Classical Arabic and traditional Shammar Najdi Arabic we had the order as in Figure 4.3 (For further explanation of this diagram, cf. section 3.2). In Sudair Najdi Arabic the order is as in Figure 4.5.

![Figure 4.5 Dominance relations of voice/aspect constraints in Sudair Najdi Arabic](image)

Table 4.6 shows the ranking of *[\textsc{Intr, Imp, Voice}] above Faith constraints.

<table>
<thead>
<tr>
<th>Tableau 4.6 Input: Sudair Najdi Arabic t-\textit{a}-\textit{b}\textsuperscript{-}\textit{d}-a-b, ‘drink’ INTR.IMP.ACT.3MASC.SG</th>
<th>*[\textsc{Intr, Imp, Voice}]</th>
<th>Faith(Asp)</th>
<th>Faith(Voice)</th>
<th>*[\textsc{non-3rd, Voice}]</th>
<th>*[\textsc{Imp, Trans}]</th>
<th>Con(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t\textsc{\textit{i\textsc{\textit{sh}}}rab}</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>\textsc{\textit{int. Imp. \textit{voi} \textasciitilde}}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t\textsc{\textit{a\textsc{\textit{sh}}}rab}</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>\textsc{\textit{int. Imp. \textit{act}}}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t\textsc{\textit{a\textsc{\textit{sh}}}rab}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>\textsc{\textit{int. Imp. \textit{voi} \textasciitilde}}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The question remains why this morphological markedness constraint leads to \textsc{\textit{ta\textsc{\textit{sh}}}rab} → \textsc{\textit{t\textsc{\textit{i\textsc{\textit{sh}}}rab}}} for the active form and not to \textsc{\textit{ta\textsc{\textit{sh}}}rab} → \textsc{\textit{ta\textsc{\textit{sh}}}rab} for the passive form. This choice may be made because the \textit{i-a} vocalism for the passive is more stable than the \textit{a-a} vocalism for the active. That is, the passive form is also used in the passive of the transitive while the active of the transitive form is \textit{a-i}. 
In this change, the promotion of a phonological markedness constraint has led to the promotion of morphological markedness constraints as well, under the proper circumstances. That is, the raising of morphological markedness constraints is facilitated when the phonological markedness constraints have risen already, and when the social circumstances are favourable. Both these conditions are fulfilled in some Najdi varieties, and there are indeed more morphological changes in varieties spoken by sedentary Arabs who have more contact with city Arabic. These changes cannot be explained with the help of only phonological constraints: there is no plausible constraint reordering which yields e.g. \textit{tis\text{"a}rab} instead of \textit{ta\text{"a}rab}, but which would maintain \textit{taskin TRANS.ACT.IMPERF} instead of \textit{tiskin}.

In Najdi Arabic varieties closer to Mesopotamia (cf. section 4.3.2.2 and Ingham 1982) further morphological markedness constraints were promoted, which led to the ranking as in Figure 4.6. In one variety voice is only expressed in third person forms.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure4_6.png}
\caption{Dominance relations of voice and aspect constraints in Mesopotamian 1}
\end{figure}

In other Mesopotamian varieties the internal passive is lost, except in special registers like poetry. This means that *\text{[Voice]} has been raised above Faith(Voice), making *\text{[Intr, Imp, Voice]} *\text{[non-3\textsuperscript{rd}, Voice]} vacuous. In these dialects other morphological markedness constraints were also promoted: transitivity is no longer expressed in the imperfective. The order of morphological constraints has become as in Figure 4.7.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure4_7.png}
\caption{Dominance relations of voice and aspect constraints in Mesopotamian 2}
\end{figure}

In the urban Mesopotamian dialects finally, like in the Baghdad colloquial variety, neither transitivity, nor voice is ever expressed stem-internally.\textsuperscript{95} The morphological constraint ranking has become as in Figure 4.8.

\textsuperscript{95} In section 4.7.2.3 I deal with the replacement of voice infixes with voice prefixes in modern Arabic.
In these latter two figures Con(Stem) is no longer dominated by all three faithfulness constraints, because these are themselves fully dominated by higher ranked markedness constraints, which prevent violation of Con(Stem). When we compare other Arabic varieties, we see that this development continues, cf. Figure 4.9: in Moroccan Arabic aspect is not expressed by stem vowel modification either, and Con(Stem) is no longer violated by morphological faithfulness constraints, cf. however, the discussion in the next section.

Finally, in Nubi Arabic Con(Stem) has risen further, leading to a situation in which no morphological category nor any phonological constraint can have any impact on the internal form of the stem.

4.7.2.3 New voice and aspect affixes

Until now I have discussed only one aspect of the inflectional changes in Arabic, namely the loss of semantic categories expressed with infixes. Now I turn to cases where this loss was balanced by the introduction of new prefixes or the extension of old prefixes. Previously I discussed how in Mesopotamian Arabic the opaqueness of voice, transitivity and aspect infixes led to reanalysis and reordering of constraints. Morphological markedness constraints were promoted, until in Mesopotamian Arabic both *[Voice] and *[Trans] were ranked higher than Faith(Voice), and Faith(Trans). However, this order cannot explain why in Mesopotamian Arabic voice was expressed again by the extension of a previously derivational affix. That is, augmentational pattern 7 has extended its domain, become more productive and more predictable in its meaning, and become the new passive marker. I will now discuss how we can account for this in OT.

When voice is reintroduced in Mesopotamian or Moroccan Arabic as a category, the morphological markedness constraint *[Voice] cannot be ranked above Faith(Voice). We can model this introduction of the extended augmentation affix in several ways.

The first solution is to combine the initial restriction on infixed voice expressions and later reintroduction of prefixal voice into one constraint, namely: *[Voice, Imperfective, intransitive/ *stem-internal]. The promotion of this constraint does not prevent later reintroduction of prefixal voice. The advantage of this solution is that only one constraint reordering is needed. The disadvantage is that it is implausible that learners would prefer this specific constraint above a less specific constraint *[Voice, Imperfective, intransitive] when there is no sign of voice expression stem-externally yet. In other
words, the formulation of this constraint builds in later changes, which a learner cannot know. This solution is more appropriate when the infixal reduction and the affixal extension occur together.

A second solution is to suppose that there has not been a reordering of constraints in Najdi and Mesopotamian Arabic. Instead, in Najdi Arabic the lexical item \([\text{PASSIVE}}; iV] could have changed its specification. When we assume that this lexical item has added a condition that says \([\text{PASSIVE}}; iV/ -\text{IMPERFECT OR -INTRANSITIVE}] we retain the same effects. Moving towards the more sedentary Mesopotamian varieties we must assume that the conditions on this lexical item became increasingly stricter, until the lexical item disappeared completely from Baghdad Arabic. The augmentation prefix of augmentation 7 may also change its specification until it has the general meaning \([+\text{passive}]. With this solution we do not have to suppose any constraint reordering. Faith(Voice) remains a highly ordered constraint, while only the corresponding lexical item has changed.

The disadvantage of this approach is that it does not explain why the lexical item changes, and why it changes in this particular direction. This could be solved by explaining how lexical items are actually acquired. We could introduce a learning algorithm that says that lexical items are only learned without conditions, like ‘-imperfect or -intransitive’ when the environment provides enough clear instances of the lexical item, without this condition. However, when we assign a kind of universal status to such conditions, we are in fact very close to introducing OT constraints. Therefore, when aiming at a model with universal constraints I favour constraint reranking over lexical change, when no other criteria need to be considered. This provides the theoretical apparatus with which the exact paths of morphological changes in diverse cases can be followed and compared.

Therefore, I first propose a stage where OT constraints like, \([\text{Intr, Imp, Voice}] and \([\text{non-3rd, Voice}] are promoted. Only in the next stage, when these constraints prevent acquisition of certain aspects of lexical items, may these lexical items be reanalysed, as we saw in Scandinavian as well. Now, the solution to the reintroduction of voice prefixes in Mesopotamian and Moroccan Arabic is as follows.

In the first stage the morphological markedness constraints, \([\text{Intr, Imp, Voice}] and \([\text{Voice}] are promoted above Faith(Voice). In the second stage language users and learners no longer meet forms that fully express voice, because of this higher ranking of markedness constraints. Consequently, the voice infixes are not fully learned anymore, and their lexical specification changes. These two steps result in a similar lexical change as in the previous solution. The advantage of this approach is, however, that with help of the OT constraint reorderings the process of change can be further analysed, and related to cross-linguistic and universal findings. In the next stage, since the voice infix has been lost from the lexicon, there is no indication that \([\text{Voice}] (or \([\text{Intr, Imp, Voice}] should be ranked higher than Faith(Voice), because there are no items that could possibly violate one of these constraints. This results in floating constraints. In the final stage, new affixes are introduced, or, old affixes extended. The expression of new voice distinctions do not violate any independently motivated constraint order, and the new learner will place Faith(Voice) above \([\text{Voice}] again, and the new affix will be expressed.

This mechanism of promotion, lexical loss, constraint floating, and reintroduction equally accounts for the loss of infixal aspect in Moroccan Arabic, and its subsequent reintroduction with the help of prefixes.
4.7.3 Reduction in person, gender and number

4.7.3.1 Classical and Najdi Arabic

Another inflectional change widespread in Arabic varieties is the partial and in Nubi even complete loss of person, gender and number marking. I focus on the reduction of affixes in the imperfective. In Classical Arabic 1st, 2nd, and 3rd person, singular, dual, and plural, and masculine and feminine are expressed with the affixes in Table 4.6 above.

Several affixes express more than one category, and not all categories are related to one morphological position. For instance, FEM is expressed both in a prefix and in suffixes. In Classical Arabic there are several morphological markedness constraints that block overgeneration. First of all, although a first person dual is a possible form on the basis of the existing affixes, it is not generated. Therefore *[Dual, 1st] ranks above Faith(Num). Other faithfulness constraints, Faith(Gen), and Faith(Pers) are ranked higher than markedness constraints that involve gender or person categories. Previously, in section 4.7.1, I introduced two other constraints:

Max(Num): “A candidate with affixes that have features that are high on the feature hierarchy is preferred above a candidate with lower features.”
Max(Cat): “A candidate with affixes that have features a and b is preferred above a candidate expressing only b, that is a general feature is dispreferred for a more specific feature.”

These two constraints must be ranked high in Classical Arabic, and the order of constraints is as in Figure 4.10.

![Dominance relations of PGN constraints in Classical Arabic](image)

This order is apparent from Tableau 4.7, Tableau 4.8 and Tableau 4.9:

<table>
<thead>
<tr>
<th>Tableau 4.7 Input: Classical Arabic</th>
<th>t-aktib-(u)na (FEM)-read-PLUR</th>
<th>t-aktib-na (2)read(FEM).PLUR</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Tableau 4.7 shows that Max(High) is ranked above Max(Num) and Max(Gen). Max(High) is violated in the first candidate because in the [t-] prefix a gender feature is
expressed in prefixal position, while in this position a person feature could also have been expressed, which is higher in the hierarchy. Max(Num) and Max(Gen) are violated because they are expressed in a fused morpheme, that is, they are not expressed in exactly one form (cf. section 3.3.3.1).

**Tableau 4.8 Input: Classical Arabic ?-aktib-?, ‘read’ 3FEM.PL**

<table>
<thead>
<tr>
<th></th>
<th>Max(Cat)</th>
<th>Max(Num)</th>
<th>Max(Gen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>y-aktib-na</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Ø-read-FEM.PLUR</td>
<td>≤</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-u:na</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>FEM-read-PLUR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tableau 4.8 shows that Max(Cat) is also ranked above the other constraints. The second candidate violates Max(Cat) because it does not use the most specific suffix possible.96

**Tableau 4.9 Input: Classical Arabic ?-aktib-?, ‘read’ 1DUAL**

<table>
<thead>
<tr>
<th></th>
<th>*[Dual, 1st]</th>
<th>Max(Cat)</th>
<th>Max(Pers)</th>
<th>*[Num]</th>
</tr>
</thead>
<tbody>
<tr>
<td>^-aktib-a:ni</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.read-DUAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n-aktib-u</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>1PLUR-read-Ø</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>^-aktib-u</td>
<td></td>
<td></td>
<td></td>
<td>**!</td>
</tr>
<tr>
<td>1-read-Ø</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tableau 4.9 shows that *[Dual, 1st] is ranked above Max(Cat), because otherwise ^-aktib-a:ni would have been selected. That is, n-aktib-u expresses the more general feature PL and ^-aktib-a:ni the more specific DUAL feature. Max(Cat) must be ranked above Max(Pers) otherwise ^-aktib-u would be an excellent candidate. Max(Cat) must also be ranked above *[Num], otherwise, again, ^-aktib-u would be selected.

Classical Arabic forms like t-aktib-a:ni, FEM.DUAL.295 show that constraints like *[Dual], *[Gen] and *[Pers] are ranked below faithfulness constraints.

In Najdi Arabic not much has changed. The only difference is that the dual is no longer expressed in any form. We can represent this change best by supposing that the filter *[Dual, 1st] has been extended and is now the high-ranked filter *[Dual]. We could also suppose that only the dual affix was lost. However, the loss of dual in the verb is accompanied by a partial loss of the dual in nouns. Therefore, it is probable that the loss took place on the semantic level, cross-cutting the whole lexicon, and not in only one individual form.

**4.7.3.2 Moroccan Arabic and Nubi**

In Moroccan Arabic several Classical Arabic affixes were lost, and after this loss several affixes were reinterpreted, cf. Table 4.29.

96 Max(Cat) and Max(High) look rather similar. However, to choose in cases where an affix may express a or b, Max(High) is needed, while in cases, like in Tableau 4.8, a constraint is needed that chooses between a more or a less specific feature content.
In addition to the loss of the dual, the first person affix \(^=-1\) has disappeared and the plural 1\(^{st}\) person affix \(n\)- has extended its meaning. Furthermore, the feminine plural \(-na=\text{FEM.PL}\) is lost. The last column of Table 4.29 shows how Moroccan Arabic can be reanalysed with the help of fewer affixes.

We could propose that some affixes were not acquired by new speakers, and that nothing else changed in the constraint ranking. When we suppose, however, that a reranking of the constraints may have led to the loss of affixes we can assume that there was a stage where *\[Dual\] and *\[Gen, Plur\] were promoted above faithfulness constraints. In addition, because these markedness constraints rose, resulting in the loss of certain affixes, other constraints rose as well. Max(Num) is no longer dominated by Max(High) and Max(Cat), because number is always expressed without fusion (contra Max(Cat) >> Max(Num)), and there is never a choice between expression of number, person or gender (contra Max(High) >> Max(Num)). Therefore, Max(Cat) and Max(High) have become irrelevant for number expressions.\(^{97}\) The order has become as in Figure 4.11.

\(^{97}\) We still must assume that the 1\(^{st}\) person \(-\) prefix has been lost as an affix, and not as a result of constraint reordering.
In some North African varieties the -i=FEM/ suffix has disappeared, and y-3MASC has changed into y-3, which means that *[Gen] has risen (cf. section 4.4.2.2 and Versteegh 1984: 89). In other words *[Gen, Plur] has been generalised. This has led to the position where Max(Pers) and Max(Gener) are no longer dominated by Max(Cat) and Max(High), because there are now no longer conflicts between fused and non-fused affixes (contra Max(Cat) >> Max(Pers) and Max(Gener)), or between affixes with ‘high’ -that is, high on the category hierarchy- versus ‘low’ categories. The North African order of constraints is as in Figure 4.12, and exemplified for *[Gen] in Tableau 4.11.

![Diagram](image)

Figure 4.12 Dominance relations of PGN constraints in North African Arabic

---

**Tableau 4.10 Input: Moroccan Arabic ?-aktib-, ‘read’ 2FEM.PL**

<table>
<thead>
<tr>
<th></th>
<th>*[Gen, Plur]</th>
<th>Max(Num)</th>
<th>Max(High)</th>
<th>Max(Gener)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-aktib-u:na</td>
<td>!</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>FEM-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-na</td>
<td>!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2readFEM.PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-u</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tableau 4.11 Input: North African Arabic ?-aktib-, ‘read’ 2readFEM.PL**

<table>
<thead>
<tr>
<th></th>
<th>*[Gen]</th>
<th>Max(Num)</th>
<th>Max(Gener)</th>
<th>Max(High)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-aktib-u:na</td>
<td>!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-na</td>
<td>!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2readFEM.PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-u</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ø-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Until now I have suggested that it was initially the rising of the markedness constraints *[Gen, Plur] and *[Gen] that allowed the Max(Num) and later the Max(Gener) and Max(Pers) constraints to become independent from Max(Cat) and Max(High). However, an alternative viewpoint suggests that first Max(Num) was promoted in Moroccan Arabic, and Max(Pers) in North African Arabic, which, as a consequence allowed a markedness constraint like *[Gen, Plur] to be promoted. Figure 4.13 shows how the constraint ranking in Moroccan Arabic would fit into this scenario.
This view depends on the exact status of the t-prefix as well. Tableau 4.12 shows that an initial rise of Max(Num), before *[Gen, Plur] has risen, is also compatible with the Moroccan Arabic facts.

Tableau 4.12 Input: Moroccan Arabic

<table>
<thead>
<tr>
<th></th>
<th>Max(Num)</th>
<th>Max(High)</th>
<th>Max(Gen)</th>
<th>*[Gen, Plur]</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-aktib-u:(na)</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>2readFEM.PL</td>
<td></td>
<td>*</td>
<td><img src="image.png" alt="image" /></td>
<td><img src="image.png" alt="image" /></td>
</tr>
</tbody>
</table>

In Tableau 4.12 we see that the promotion of Max(Num), without the promotion of *[Gen, Plur], already accounts for the loss of the FEM.PL-affix (-na is only the indicative suffix, of which the loss is a different story). When next the t-prefix is reanalysed as a zero-affix, we see that this reinterpretation concurs with the rising of the *[Gen, Plur] constraint. That is, the selected candidate remains t-aktib-u, but the t- is reinterpreted, or, with exactly the same effects, *[Gen, Plur] is promoted. For North African Arabic a similar argument can be given for the interaction of the promotion of *[Gen], Max(Gen) and Max(High).

These changes from Classical to Najdi, to Moroccan and finally to North African Arabic can be seen as the gradual promotion of markedness constraints, together with faithfulness constraints, at the expense of Max(Cat) and Max(High). These latter constraints forced the expression of more specific categories with the help of fused affixes. Promotion of faithfulness and markedness constraints resulted in the loss of especially fused categories.

When we assume that a system such as North African Arabic complies with all relevant faithfulness constraints, that is, Max(Num) and Max(Pers), then the further loss of such affixes cannot be explained by further promotion of these constraints. Therefore, for the final stage in simplification of Arabic towards Nubi, we must assume that the markedness constraints *[Num], and *[Pers] have been promoted. Now in Nubi the order of constraints has become as in Figure 4.14.
Again, these constraints eventually prevent adoption of any of the earlier affixes in the lexicon, and, when a new learner meets none of such affixes, the status of all these constraints becomes floating again. When all constraints are floating, new affixes can be introduced as in Juba Arabic (cf. page 160).

4.7.4 Conclusion

In the history of the varieties of Arabic we see the following tendencies. Rising of phonological markedness constraints leads to opaque meaning-form relations, which in their turn, lead to the rising of morphological markedness constraints. This implies that a language may first become less transparent and more complex, after which reanalysis may remove the opaqueness and change the language towards a simpler stage than before. The Arabic variety that passed through such a complex stage is Najdi Arabic, which is a Type 1 language. There is no evidence that a Type 2 variety like Moroccan Arabic also went through such a stage, without immediate loss of infixal meaning distinctions. Moroccan and Nubi Arabic show various promotions of faithfulness constraints and morphological markedness constraints independent of phonology, which corresponds to their Type 2 status.

In the person, gender and number deflection of Moroccan Arabic we saw how difficult it is to determine what force in language is responsible for deflection. Two forces operate in Arabic: First, the promotion of the markedness constraints. This corresponds to the tendency to express as few categories as possible. Second, the promotion of Max(Num), Max(Pers) and Max(Gen) constraints. These correspond to the tendency towards transparent one-to-one expression. The two tendencies cannot be separated in the development from Classical Arabic to modern Arabic, and I have shown that they correspond to two ways of constraint reranking in OT.

In both infixal and non-infixal, morphological and phonological changes we saw that there was interaction between constraint reranking and lexical change. The general movement was that affixes in one stage were lost in a later stage. When the affix loss was not a purely lexical loss, we modelled it as the result of constraint reranking. Promotion of especially morphological markedness constraints results in some affixes never reaching the surface. Consequently there is no reason for a learner to assume that there is such an affix at all. Next, when there is no potentially violating affix, the high-ranked constraint is always obeyed. Finally, when it is always obeyed, there is no evidence that it should be ranked high. Its position cannot be derived from the language data anymore, and its position is at most a default position, which can be changed by reintroduction of a constraint-violating affix. This cycle we saw in Najdi and Mesopotamian Arabic: rising of *[Voice] constraints, loss of voice infix, floating of *[Voice] constraint, reintroduction of a voice affix.

In this change, an important role is played by ‘lexicon optimisation’ (cf. section 3.4). That is, in informal terms, reanalysis of the lexicon leads to a smaller amount of faithfulness constraint violations by the candidates the lexicon provides. As a
consequence these highest ranked constraints tend to become ‘floating’, because the lexicon no longer provides candidates that could test their ranking. For example, consider the loss of *na*, FEM.PL in North African Arabic. First there is a stage in Classical Arabic, where the lexicon contains both *na* and *u*.

### Tableau 4.13 Input: Classical Arabic FEM.PL

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>Max(Cat)</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>na</em>, FEM.PLUR (fused)</td>
<td>←</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><em>u</em>, PLUR</td>
<td>←</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

In a later stage, in North African Arabic, where *[Fem] and/or Max(Num) have become more important the result is as in Tableau 4.14.

### Tableau 4.14 Input: North African Arabic FEM.PL

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
<th>Max(Cat)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>na</em>, FEM.PLUR (fused)</td>
<td>←</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td><em>u</em>, PLUR</td>
<td>←</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

In contrast with Classical Arabic, *na* never comes to the surface in North African Arabic. Therefore when the lexicon is reanalysed, *na* may be removed, and we arrive at Tableau 4.15.

### Tableau 4.15 Input: North African Arabic FEM.PL

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
<th>Max(Cat)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>na</em>, FEM.PLUR (fused)</td>
<td>←</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td><em>u</em>, PLUR</td>
<td>←</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

We call the lexicon of Tableau 4.15 optimised in comparison with Tableau 4.14, because the non-optimal candidate that violates high-ranking faithfulness constraints in Tableau 4.14 (that is, *na*, FEM.PL) is removed from the lexicon in Tableau 4.15. In other words, it violates LEX.

When comparing the changes in Arabic with the predictions of Table 3.2, most predictions appear to come out in Arabic: 1) the lexicon tends to become optimised when we turn to the more Type 2 Arabic varieties, 2) especially in Najdi Arabic, the promotion of PhonMark constraints induces promotion of filter constraints and loss of non-optimal lexical items, 3) Max(Cat) has been demoted in Moroccan and Nubi Arabic, 4) when we compare sections 4.2.2.3 and 4.4.2.3 the compliance or non-compliance with Isomorphy in Moroccan Arabic appears to be a side-effect of deflection and subsequent re-grammaticalisation of mood affixes. In other cases, Max(Order), the OT formulation of Isomorphy, is demoted as a side-effect of other changes (cf. section 4.2.2.3, 4.3.2.3, 4.5.2.3), and finally 5) several filter constraints have been promoted, independent from PhonMark constraints.

In summary, simplification in Arabic is a result of several interacting processes. Phonological markedness constraints may lead to morphological reduction. Morphological reduction may lead to lexical reanalysis, lexicon maximisation and constraint floating. We could imagine a grammar with a lexicon that is ‘optimal’, and we could conclude that complexity is only a matter of lexicon reinterpretation. However, behind superficial lexical processes, semantic and morphological constraints interact and
rerank to yield finally a floating set of constraints, and a simple lexicon. With OT we can model the processes behind this simplification which only become clear when we look at the historical processes, instead of only at the synchronic outcome.