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LEXICAL VARIATION IN MOROCCAN ARABIC: THE GENITIVE EXPONENT IN EXPERIMENTAL DATA FROM FOUR CITIES

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Introduction

Arabic in Morocco is characterised by a considerable variation of dialects that result from subsequent immigration movements of Arabophone groups and varying degrees of influence from the substrate languages, especially Berber (Colin, 1945b, Heath, 2002, Lévy, 1998).

Morocco is also one of the better documented countries in terms of Arabic dialectology. This enables us to study the changes that occurred during the past century and are still going on today. Increased access to education and mass media, and the partial replacement of French by Standard Arabic in formal domains have led to the rise of the so-called *arabe médian* (Youssi, 1992) as an intellectual koine, and an intermediate between the written language and the traditional dialects.

As in many places in the world, increased mobility and urbanisation also contributed to dialect levelling, one of the consequences being the decline of traditional urban dialects (Caubet, 1998, Messaoudi, 1998).

The current paper wants to contribute to the study of variation and change by documenting lexical variation in the analytic possessive construction in four Moroccan cities.

Like other Arabic vernaculars, Moroccan Arabic (MA) has two competing constructions for the expression of attributive possession. Following Nichols (1986, 1992), I refer to the possessed as the head and the possessor as the dependent element in the construction. The synthetic genitive consists of juxtaposition of the nouns referring to the head and the dependent, as in (1a)[1]. The dependent renders the head noun definite, and the latter cannot be marked with the definite prefix in this construction. For certain noun classes, the SG also involves morphological marking of the head noun. The analytic genitive (AG) makes use of a separate word, the so-called genitive exponent, which expresses the relationship between the two referents (1b). In this construction, definiteness is marked independently on both the head and the dependent noun. When the dependent is a pronoun, it is affixed to the head noun or to the genitive exponent, respectively (2). For more details see e.g. Caubet (1993b: 301 ff.).

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[1] Abbreviations used in the glosses: 3 third person, DEF definite prefix, DEM demonstrative, F feminine, M masculine, PL plural. Orthography: a dot underneath marks pharyngealised consonant phonemes; j voiced palato-alveolar sibilant; x voiceless uvular fricative; ʕ voiced pharyngeal fricative; ʔ laryngeal voiceless stop.

(1)

a)	*ṛas*		*l-kelb*
	head		DEF-dog
b)	*ṛ-ṛas*	*dyal*	*l-kelb*
	DEF-head	of	DEF-dog
	"The dog's head."		

(2)

a)	*ṛasha*	
	head-3F	
b)	*ṛ-ṛas*	*dyalha*
	DEF-head	of-3F
	"Her head"	

The variation between analytic and synthetic construction is the topic of another paper (Boumans, 2006). Here we are concerned with the lexical variation in the genitive exponent: along with *dyal* in the above examples, the forms *d* and *ntaʕ* (with its phonological variants ~ *mtaʕ* ~ *btaʕ* ~ *taʕ*) are current. (In certain dialects the alveolar stop in *d* and *dyal* is aspirated [d̲], and *di* and *ddi* occur in Jewish dialects; see Heath, 2002: 461-62 for details.)

d is not used with pronominal affixes, so in this context there are only two lexical alternatives.

Recordings of 96 speakers from Tangier, Rabat, Casablanca and Oujda are investigated in order to answer the following questions: 1) are the lexical choices in accordance with the available dialect descriptions, and 2) what is the effect of levelling on variation within and among the four populations? While traditional dialect descriptions are primarily qualitative in nature, this paper takes an explicitly quantitative approach.

The exponents

ntaʕ is a grammaticalised noun, cf. Classical Arabic *mataaʕ* "possession". Other genitive exponents in other dialects are similarly derived from nouns (cf. Eksell Harning, 1980, Versteegh, 1997: 107). These grammaticalised nouns occur directly before the possessor NPs, that is, in the same position as the head noun in the synthetic construction. Therefore these particular analytic constructions must have developed from the Old Arabic synthetic construction.

The origin of MA *d* and *dyal* is less obvious. Kampffmeyer (1900) and (Colin, 1920, Colin, 1945a) relate the form *d* to more archaic North-African forms *elli*, *aldi* and *addi* that served as demonstratives and relative particles. Colin analyses *dyal* as a combination of *d* or a cognate form plus the preposition *l*, with an allomorph *yal-* before pronominal pronouns. This etymology ties in with Marçais's (1952) description of the dialect of Djidjelli in North-East Algeria. In this dialect, the common genitive exponent with NP possessors is *eddi*, which is also the relative clause marker. With pronominal dependents, *eddi* is followed by the preposition *l-*. In the

Djidjelli dialect, the form *dyal* is used as well, but only with pronominal suffixes. For further discussion of the etymology of *dyal*, see Eksell (1984).

In all relevant Moroccan and Algerian dialects the form *d* is used only with NP possessors, whereas in many dialects *dyal* is reserved for pronominal possessors (Eksell Harning, 1980: 115, 131). This allomorphy is reminiscent of that of the preposition *l* "to; for", which in some varieties of MA has the allomorph *lil-*, besides *li-*, before pronominal suffixes (Harrell, 1962: 209). The use of *dyal* with NP dependents, in some varieties to the exclusion of *d*, could be a generalisation of the form used with pronoun suffixes. Many speakers now vary between *d* and *dyal* before NP possessors. Heath (2002: 461) makes the observation that *d* is preferred with a numeral heads the genitive construction.

The exponent *mtaʕ* must have been part of the oldest types of Arabic in North Africa, as witnessed by Maltese *ta* and Andalusian cognate forms. Ferrando (2002) considers this particle an important lexical isogloss for the entire western group of Modern Arabic, although *mtaʕ* is also current in Egypt and Syria (Eksell Harning, 1980).

The particles *d* and *dyal* are typically Moroccan, but also found in some coastal dialects of Algeria (Eksell Harning, 1980, Heath, 2002: 462). While these forms must be more recent than the *ntaʕ* forms, they have become characteristic of the old, pre-Hilali sedentary dialects of Morocco (Heath's 'northern type'). *ntaʕ* is a feature of the so-called bedouin or Hilali dialects (Heath's 'central type').

In addition to the lexical variation, the genitive exponents *dyal* and *mtaʕ* sometimes have feminine and plural forms in agreement with the head noun: feminine *dyalt*, *mtaʕt* and plural *dyawel* and *mtaweʕ*, particularly in the Hilali type dialects (Heath, 2002: 462, Youssi, 1992: 162).

Data and analysis methods

Database

I used semi-spontaneous narratives that had been recorded and transcribed for earlier research projects. The major part consists of so-called frog stories: respondents were asked to retell Mayer's (1969) picture book *Frog, where are you?*, which is a popular tool in child language research. In the early 1990s, Petra Bos and Abder El Aissati recorded frog stories for their research on bilingual language acquisition (Bos, 1997) and language loss (El Aissati, 1997) among Arabophone Moroccan children and adolescents in the Netherlands. In addition to the frog stories, Bos's recordings contain descriptions by the same children of six additional, much shorter cartoons that were especially designed for her investigation of topic continuity[2].

Bos and El Aissati collected their material from Morocco as control data for their research on Moroccan Arabic in the Netherlands. For optimal comparability they collected their control data in the regions from which most of the Arabophone immigrants originate. For practical reasons they worked in four cities: Tangier, Rabat, Casablanca and Oujda.

Table 1 presents an overview of all Moroccan Arabic frog stories. The average transcript is about 300 words long.

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[2] These cartoons, all metadata and annotations are contained within the Dutch Bilingualism Database (DBD), which is hosted by the Max Planck Institute in Nijmegen. These data are available as an online resource from http://www.mpi.nl/world/corpus/. From the menu, choose IMDI-corpora, DBD and Moroccan Arabic.

Table 1. Overview of frog stories collected by Bos and El Aissati.

collection	place of residence	age	N speakers
Bos 1992	Tangier	5, 7, 9	24
Bos 1992	Rabat	5, 7, 9	24
Bos 1992	Oujda	5, 7, 9	23
El Aissati 1994	Tangier	15-17	11
El Aissati 1994	Casablanca	11-17	11
El Aissati 1994	Oujda	15-17	3
Total			96

The recordings were made in kindergartens and schools. This rather formal context primed the children to use Standard Arabic, but the researchers asked them to tell the story 'as if they were at home', and virtually all recordings are entirely in MA. The Dutch researcher Bos cooperated with a Moroccan assistant, Khadija Latifi, who was born in Casablanca and lived in Rabat. El Aissati is a Berberophone from the central Rif area. These three researchers interacted with the respondents in a variety of MA that can be characterised as a form of the Atlantic coast koine. In the transcribed recordings, Bos and El Aissati only used the genitive exponent *dyal*; Latifi used both *d* and *dyal*.

The available data cover only part of the dialectal variation in Morocco. Conspicuously absent are southern dialects as well as rural and nomadic communities. Nonetheless, the data represent major dialect divisions of Moroccan Arabic. Tangier represents the pre-Hilali or northern dialects, whereas Hilali (or bedouin) dialects are spoken in the other three cities, with Oujda representing a branch clearly distinct from Casablanca and Rabat. A pre-Hilali urban dialect used to be spoken in Rabat, but this variety is now only to be found among speakers above the age of 35 (Messaoudi, 1998). The informants from the four cities constitute random samples of local school populations. No criteria were applied to select 'authentic representatives' of the local dialects, as is customary in dialectology.

Analysis

Bos and her assistants transcribed the stories in Chat format, using Clan software (MacWhinney, 1991). Her transcripts available on the CHILDES website[3]. I transcribed myself the stories collected by El Aissati. I used Clan software to search the data for genitive exponents and head nouns.

Differences between the four speaker populations are investigated both at the level

[3] http://childes.psy.cmu.edu/data/ .

of tokens and of speaker categories. As a first step, contingency tables were used to evaluate the differences between populations. Where the distribution of lexical items was found to depend on the locality, contingency tables with the same data were used for pairwise comparisons between the four cities. Strictly speaking it is not proper to test several hypotheses with the same data. For this reason the pairwise comparisons should be taken as an auxiliary in the interpretation of the overall results.

Three exponents (*nta*ʕ, *d* and *dyal*) are distinguished for the AG with an NP dependent, and two in case of a pronominal dependent (*nta*ʕ and *dyal*). The same speaker may vary between two or three genitive exponents during the recording. This means that there are three mutually excusive speaker categories in constructions with a pronoun dependent, i.e. those who used *nta*ʕ, those who used *dyal* and those who used both. For constructions with an NP dependent there are in theory seven speaker categories (three with a single exponent type, three with a combination of two and one with all three).

A contingency table was also used to tests Heath's (2002: 461) claim that *d* is preferred over *dyal* with numeral dependents. Fisher's exact test was used in all cross tabulations.

Results

Lexical variation with NP dependent

At the level of tokens, we see that *dyal* is used everywhere, *d* is common in Tangier and Rabat, and *nta*ʕ is important in Casablanca and Oujda (see Fig. 1). The overall distribution of exponent types depends on the location ($p = 0.000$). The exponent *d* was found more often in Tangier than in Rabat, and the difference between these two cities is significant (for p values of all pairwise comparisons, see Table 4 below). The high incidence of *d* also distinguishes Rabat from Casablanca and Oujda. The data show no difference between Casablanca and Oujda.

Table 2 shows the distribution of the speakers from the four cities over all attested speaker categories. Of the theoretically possible mixed categories only two occurred in the data set. Firstly, in each of the cities some speakers alternatively use *d* or *dyal*; this is actually the second largest speaker category. Secondly, three speakers from Oujda were found to vary between *nta*ʕ and *dyal*. Some of the speakers did not produce any analytic genitive at all; for this reason the totals do not sum up to those in Table 1.

Table 2. Distribution of speaker categories for the AG with NP dependent. dy = speakers who used both *d* and *dyal*; ty = speakers who used *dyal* and *nta*ʕ.

	speaker category					Total
	d	*dyal*	dy	ty	*nta*ʕ	
Tangier	12	8	4	0	0	24
Rabat	0	7	9	0	1	17
Casa	0	6	1	0	2	9
Oujda	0	8	1	3	7	19
Total	12	29	15	3	10	69

The distribution of the speaker categories is clearly non-random (p = 0.000), though in all four cities, many speakers use *dyal*. Again, a first divide can be made between Tangier plus Rabat, where *d* is common and *ntaʕ* is rare, and Casablanca and Oujda where relatively many speakers use *ntaʕ* while *d* is rare. The distribution of speaker categories in Tangier is obviously very different from that in Casablanca and Oujda. In addition, only speakers in Tangier used exclusively *d* with NP dependents, which makes this group different from their peers in Rabat. Of the remaining pairwise comparisons, only that between Rabat and Oujda shows a significant difference, though Rabat-Casablanca is approaching significance (Table 4).

Lexical variation with pronominal dependent

With a pronominal dependent, we see that *dyal* prevails in all four cities (see Fig. 2). The proportion of *ntaʕ* tokens increases going from Tangier to Rabat, Casablanca and Oujda. The overall distribution of *dyal* and *ntaʕ* depends significantly on the location (p = 0.000). With its small proportion of *ntaʕ*, Tangier differs significantly from Rabat, and by implication from the other two cities as well. The difference between Rabat and Oujda is also significant; the other pairwise comparisons are not (Table 4).

In terms of speaker categories, we find that in all four cities the speakers who used *dyal* constitute the largest group, but *ntaʕ* speakers are important in Rabat, Casablanca and Oujda. The distribution of speaker categories depends significantly on the location (p = 0.002; Table 3). The difference between Tangier and each of the other cities is significant, but pairwise comparisons between Rabat, Casablanca and Oujda are not (Table 4).

Table 3. Distribution of speaker categories for the AG with pronoun dependent.

speaker category				Total
	dyal	*ntaʕ*	both	
Tangier	25	0	1	26
Rabat	9	3	0	12
Casa	3	2	1	6
Oujda	11	7	1	19
	48	12	3	63

Table 4. Crosstabs summary of pairwise comparisons between the four cities. * p < 0.05, ** p < 0.01

	NP dependent		**pronoun dependent**	
	speakers	tokens	speakers	tokens
Tangier-Oujda	0.000**	0.000**	0.001**	0.000**
Tangier-Casa	0.005**	0.000**	0.015*	0.001**
Tangier-Rabat	0.001**	0.008**	0.026*	0.022*

Rabat-Oujda	0.002**	0.000**	0.813	0.014*
Rabat-Casa	0.096	0.006**	0.387	0.262
Casa-Oujda	0.455	0.280	0.624	0.176

Gender and number agreement

No instance of plural, and only a singe case of feminine gender agreement occurs in the data:

(3)

l-kelb	hezz	dik	l-qerʕa	dyal-t-u.
DEF-dog	lift	DEM.F	DEF-jar	of-F-M

"The dog raised lifted that jar of his." Si Mohammed (7), Rabat

Though most possessive relationships in the frog stories have a masculine singular head (e.g. *l-kelb dyal-u* "his dog"), the absence of number and gender agreement in the data cannot be explained by the lack of appropriate contexts. Table 5 lists the feminine and plural head nouns in Casablanca and Oujda, the cities where both *dyal* and *ntaʕ* are common, and agreement is most expected.

Table 5. Masculine, feminine and plural head nouns with the genitive exponents *dyal* and *ntaʕ* in Casablanca and Oujda.

	exponent	m head	f head	pl head
Casablanca	*dyal*	15	8	6
	ntac	1	4	0
Oujda	*dyal*	33	13	4
	ntaʕ	28	8	4

Preference for *d* over *dyal* with numeral heads

It turned out that the large majority of genitive constructions with a numeral head are found in the data from Tangier[4]. I tested the 'numerals hypothesis' with the data from Tangier only, because it would not be justified to draw conclusions about all four populations on the basis of such a skewed data set.

At least in Tangier, the choice for either *d* or *dyal* does indeed depend on whether the head of the construction is a numeral ($p = 0.042$; Table 6). Speakers used *d* almost exclusively in expressions with a numeral head, as in *juj d g-granat* "two frogs". With non-numeral heads, Tangier speakers more often vary between both

[4] The finding that numerals in analytic constructions are so unevenly distributed over the four cities deserves some explanation. In counting, MA uses either the analytic or the synthetic genitive, depending on the numeral and the counted object (Caubet, 1993a: 150 ff., Caubet, 1993b: 284-5). With the numeral *juj* "two" both constructions are common, e.g. *juj jranat* or *juj d j-jranat* "two frogs". It turns out that "two" is by far the most frequently occurring numeral in the picture descriptions, and that in Tangier, *juj* typically triggers the AG while in the three other cities *juj* most often triggers the SG (cf. Heath 2002: 467-68).

exponent forms.

Table 6. Distribution of the genitive exponents *d* and *dyal* over constructions with and without a numeral head, in Tangier.

exponent	numeral head	other head	total
d	12	25	37
dyal	1	18	19
total	13	43	56

As for the other three cities, the transcripts contain two additional tokens of a numeral followed by *d*, one each in Rabat and Oujda, and one further counter-example of a numeral plus *dyal* (*juj dyal l-qerqrat* "two frogs" in Oujda). So there is some indication that *d* is generally preferred over *dyal* in counting, insofar as speakers actually vary between these two forms. In Oujda, *ntaʕ* occurs in counting as well, e.g. *juj ttaʕ ḍ-ḍfaḍeʕ* "two frogs" (but here the numeral *juj* "two" typically triggers the synthetic construction, e.g. *juj qerqrat* "two frogs").

Discussion

Comparison with published data

The distribution of *dyal*, *d* and *ntaʕ* is generally in accordance with Heath's description (2002: 460-62). Heath collected most of his data on Muslim dialects in 1986. He typically had three to nine informants per locality, who were over 18 and had "strong local connections" (2002: 13). One remarkable difference between Heath's findings and the frog story data concerns the particle *d*. According to Heath short forms like *d* are generally preferred over *dyal* before nouns (2002: 461); in the frog story data this is true only for Tangier, and only to a certain extent (Table 6).

Secondly, gender and number agreement are much less common in these four cities than the literature seems to suggest. *ntaʕ* always shows both types of agreement in the rural dialects investigated by Eksell Harning (1980: 133), including the Chaouia region in the vicinity of Casablanca. Heath (2002: 585 map 7-6) found plural agreement with many speakers from Rabat, Casablanca and Oujda. My interpretation is that Heath refers to the presence versus absence of the phenomenon, rather than the relative frequency of its occurrence.

Dialect levelling and change

The current limited study on lexical items with a grammatical function shows both the variation among Moroccan dialects and the tendency of dialect levelling. As for the variation, the classical dichotomy between pre-Hilali and Hilali dialects is still clearly reflected in the geographical distribution of genitive exponents, with much use of *d* in Tangier, and *ntaʕ* in Oujda and Casablanca. Rabat, where the traditional pre-Hilali dialect has largely been replaced by a Hilali type (Messaoudi, 1998), still occupies an intermediary position and the distribution of forms is quantitatively different from Tangier as well as Oujda and Casablanca.

Levelling of dialectal differences is first of all apparent from the variation which is found within each of the four cities. It is the result of two main social developments.

The first is the propagation through mass media, education and mobility of the language of the large cities on the Atlantic coast as a general Moroccan Arabic koine

(Lévy, 1998). This tendency further spreads the use of *dyal* at the detriment of *ntaʕ* and possibly also *d*. Youssi gives *dyal* as the form used in *L'arabe marocain moderne* (1992: 162), and considers *ntaʕ* forms to be 'variantes régionales' (1992: 162 n.66). For the southern Arabophone oasis of Skoura, Aguadé and Elyaacoubi (1995: 130) note that *ntaʕ* is the form most used by older persons, whereas young people vary between *ntaʕ* and *dyal*.

Whether Oujda underwent a similar shift toward *dyal* cannot be established due to the lack of both detailed historical documentation and comparable speech samples from older speakers. It is likely that *dyal* is old in Oujda, as it was recorded for the dialect of the nearby Algerian town of Tlemcen in the late 19th century (Marçais, 1902).

Casablanca, of course, witnessed a tremendous population growth due to immigration in the past century. A survey held in 1952 (Adam, 1968: 257 ff.) showed that only 16% of the heads of household was born in Casablanca, some 8% was born in Fez, Marrakech or another city, and the great majority had immigrated from rural areas. Almost all rural immigrants originated from the triangle between Casablanca/Rabat, the mouth of the river Dra on the Atlantic coast, and the bend of the Dra in the Zagora region (Adam, 1968: 266). *ntaʕ* is found all over that area, but at least today *dyal* is more common (Heath, 2002: 461).

The Chaouia tribes surrounding were the primary source of urbanisation, contributing almost a third of the total population (Adam, 1968: 267). *dyal*, *d* and *ntaʕ* are all reported for the rural Chaouia dialects some hundred years ago (Kampffmeyer, 1903, cited in Eksell Harning, 1980). Kampffmeyer's Casablanca phrase book (1912), based on the speech of just one inhabitant of Chaoui origin, gives only occasional examples of *ḏi* (mostly with numerals e.g. p. 47, 48, 49) and very few examples of *ḏyal* (e.g., *lḥidma ḏyālkum*, p. 74, without gender agreement). In sum, in Casablanca the variation between *dyal* and *ntaʕ*, with preponderance of the former, is probably as old as the city itself.

In Tangier, the particle *d* seems to have lost ground to *dyal*. Eksell Harning (1980: 131), with reference to Assad (1978: 114), ranges Tangier among the dialects that strictly reserve *dyal* for genitives with pronoun dependents. Half of the 1990s school population recorded by Bos and El Aissati used *dyal* with NP dependents (Table 2). Even in dialects that primarily uses *d* with NP dependents, the alternative *dyal* occurs in some contexts (Vicente, 2000: 136), so in this case data on tokens may be more informative: *dyal* is almost as common as *d* when the head of the construction is not a numeral (Table 6). The increased use of *dyal* in comparison with the traditional Tangier dialect may be due to influence of the MA koine, as Youssi (1992: 162) does not mention *d* as a genitive exponent Modern Moroccan Arabic. However, we cannot exclude a dialect-internal development.

The second mechanism of dialect levelling is the large-scale urbanisation, which brings Hilali type rural dialects into the cities where a pre-Hilali dialect was traditionally spoken (Heath, 2002: 5, Lévy, 1998, Messaoudi, 1998). Caubet (1998: 169, 174) reports on this development in Fez. Her study on three generations from the same family reveals that the older generations only use *dyal* ~ *d*, whereas the children also use *taʕ* ~ *ntaʕ*. Likewise in Tangier and Rabat, *d* and *dyal* are the traditional forms (Assad, 1978, Brunot, 1931-1952, Messaoudi, 1998), and the occurrence of *ntaʕ* results from the settlement of rural dialect speakers. The narrators of the frog stories may either be (descendents of) settlers themselves, or their speech may be influenced by the covert prestige of the rural dialects. The covert prestige of rural dialects derives from their association with masculine virtues like

toughness and roughness (Aitchison, 1991: 65 ff., Muumiin, 1995, on the dialect of Casablanca). If prestige is an important factor, we predict more use of *ntaʕ* among males than among females; something which requires further investigation[5].

The findings on the numerals offer a first idea of how the selection lexical also depends on the head of the analytic genitive construction. One explanation is that *d* is favoured in fixed and frequently occurring expressions, including counting, simply because it is shorter. Alternatively, one can hypothesise that in communities where one form is being replaced by another, fixed expressions retain the older form for a longer time period, cf. my discussion of the distribution of analytic and synthetic genitive (Boumans, 2006). The later hypothesis could find support in communities where has *ntaʕ* been partly replaced by *dyal*. The two analytic genitives in example (4) illustrate this scenario:

(4)

xorj-u l-u l-wlad dyal duk j-juj ttaʕ ḍ-ḍfaḍeʕ
come.out-PL to-3M DEF-child.PLof DEM.PL DEF-two of DEF-frog.PL
"The children of those two frogs came out to him." Rabie (14), Oujda

Finally, we need to be aware of the possibility that the speakers accommodated their behaviour to that of the researchers. This may have may have increased the use of *dyal* in some cases, or prevented the application of gender and number agreement. Since the data were not collected for dialectological studies, the researchers did not specifically try to avoid this methodological problem. However, the verbal interaction was rather limited in this context, as the frog stories are basically monologues.

Conclusions

The frog stories provide a stronger quantitative basis for the synchronic lexical differences between Tangier, Rabat, Casablanca and Oujda, with respect to the genitive exponent. They also corroborate the impression that *d* is favoured after numerals, at least in Tangier. The variation within each city testifies to the ongoing dialect levelling and language change. This detailed account of the status quo in the early 1990s may facilitate the study of future developments. Further research may also elaborate on the distribution of genitive exponents over the different semantic relationships expressed by the possessive.

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[5] The frog story data are not particularly suited for investigation sex-related variation, because of the age differences and the young age of many of the speakers.

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ABSTRACT

The lexical variation in genitive exponents (*d*, *dyal* and *ntaʕ*) was studied in 96 semi-spontaneous narratives by school children in Casablanca, Rabat, Tangier and Oujda. Quantitative differences between local populations were calculated and statistically tested, for attributive genitives with pronominal as well as noun phrase dependents. Despite increased dialect levelling in the past century, speakers from these cities show important quantitative differences in their lexical preferences, generally in accordance with dialect descriptions. On the other hand, *dyal* is common in all four cities, and variation within local populations and individuals testify to dialect contact and probably change. With NP dependents, *dyal* is more common than dialectological literature suggests, especially in Tangier. Gender and number agreement in *dyal* and *ntaʕ* was very rare. The exponent *d* is preferred after numerals, at least in Tangier.

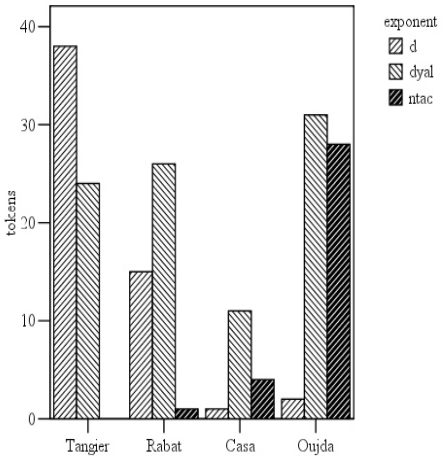

Fig. 1. Distribution of exponent types for the AG with NP dependent.

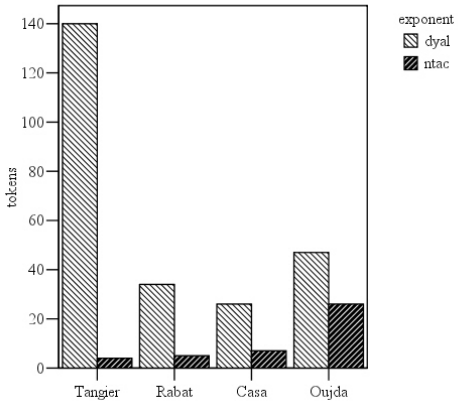

Fig. 2 Distribution of the exponent types for the AG with pronoun dependent.