

SPOKEN AND WRITTEN NUMBERS
IN A POST - COLONIAL COUNTRY: THE
CASE OF ALGERIA

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Algeria

- In the world



- In the mediterranean region

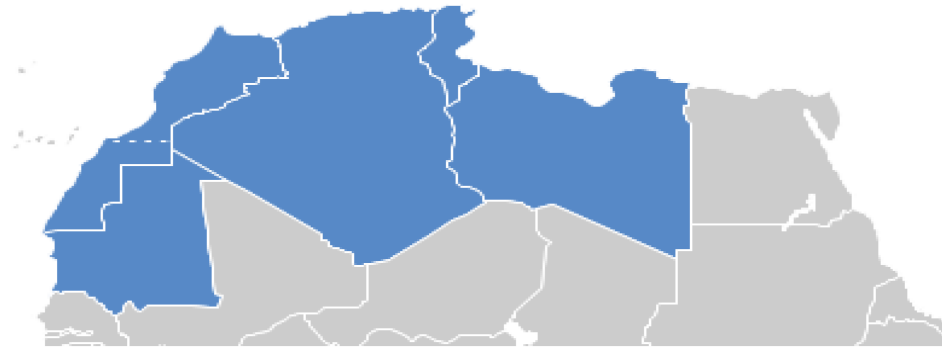


Politically, it is considered

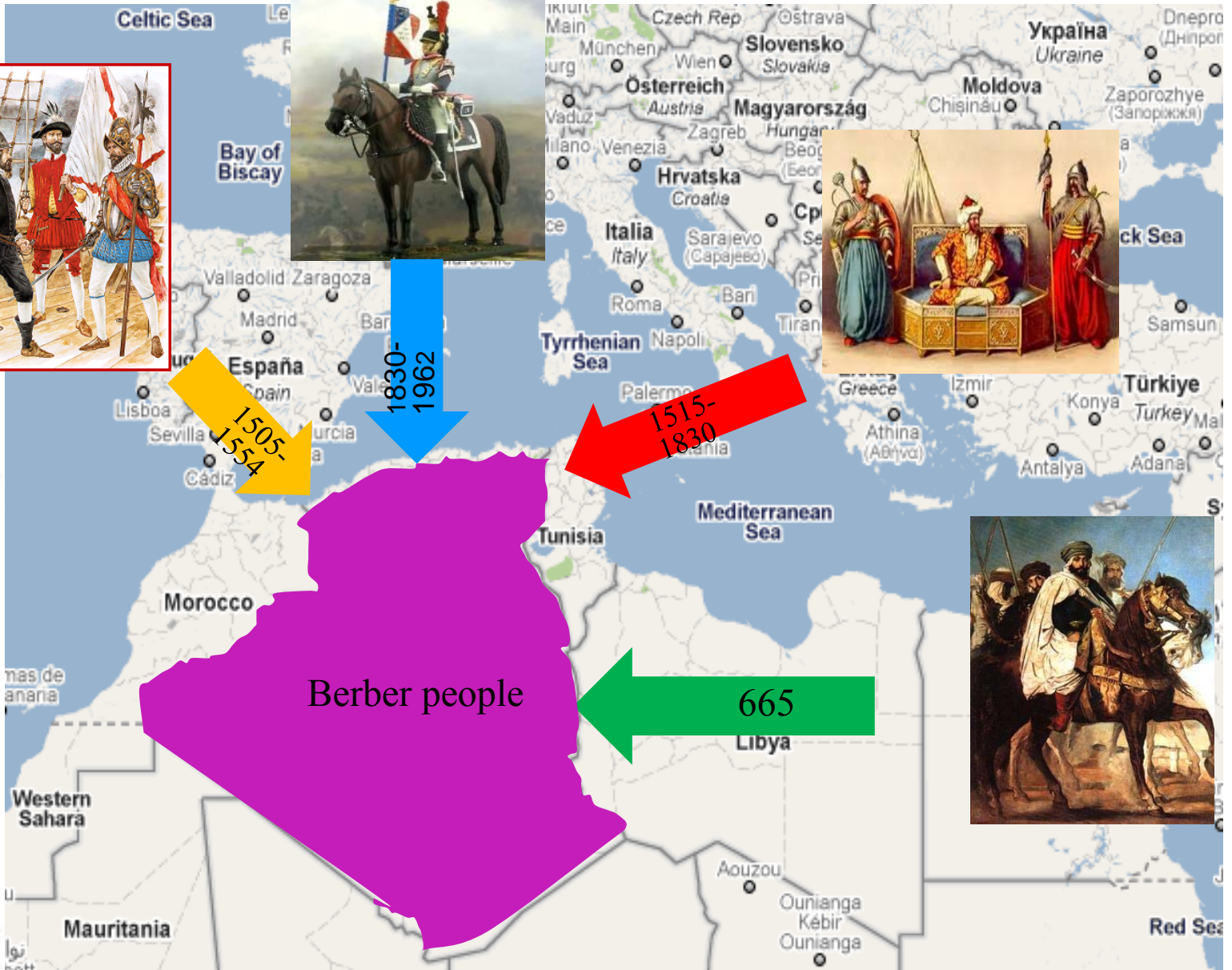
➤ As an Arabic country



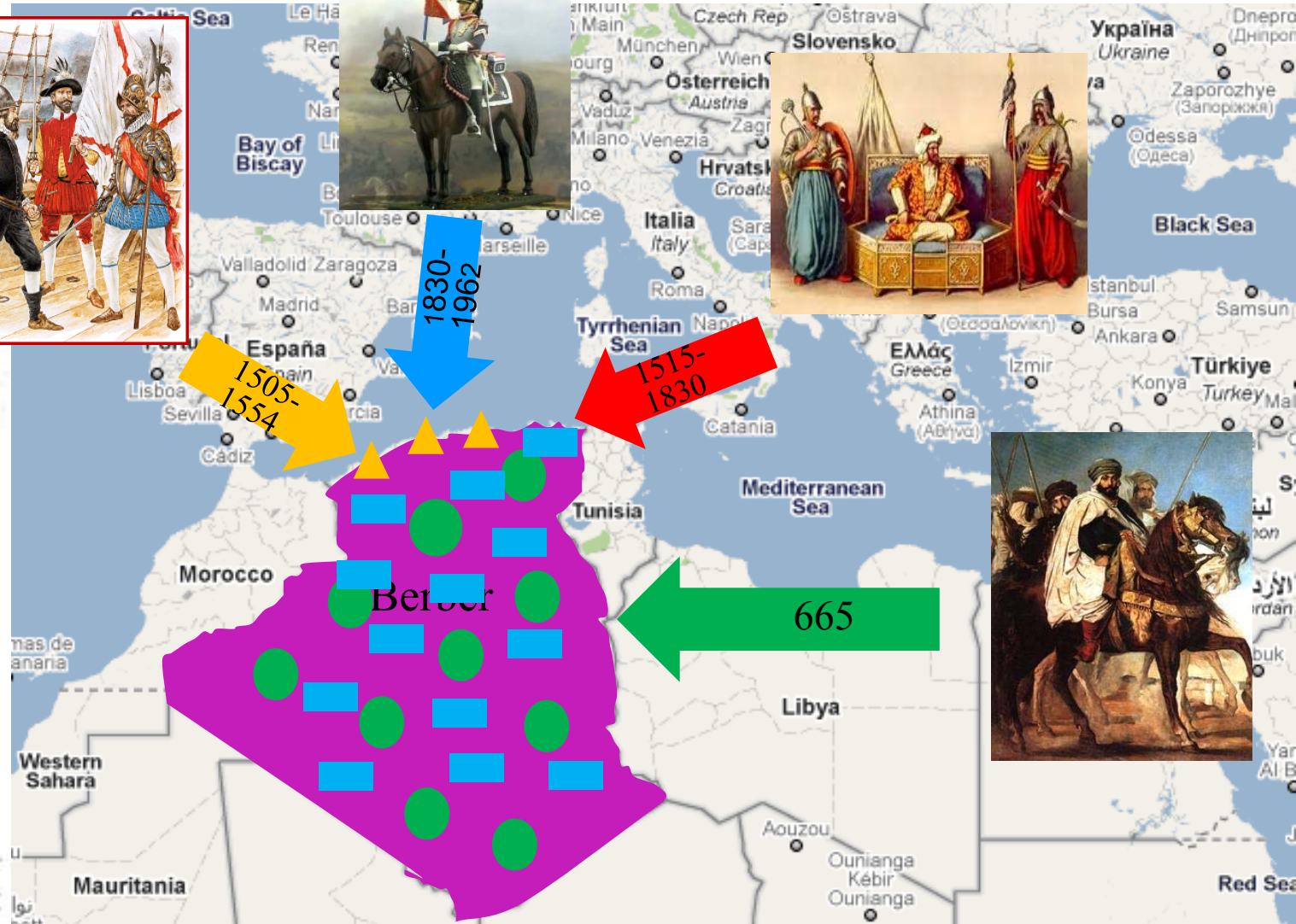
➤ As a Maghreb country



But culturally, the situation is much more complex

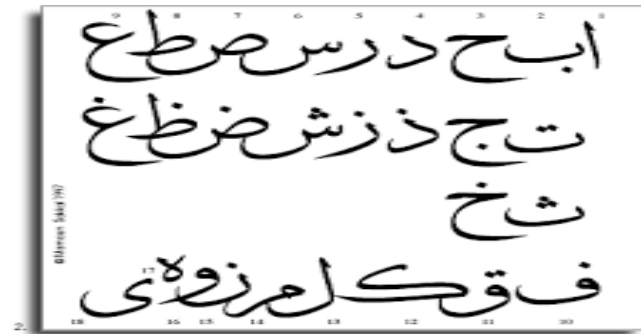


Linguistic situation



Linguistic situation

- Classical Arabic



- Dialect



- Berber language



- French language

a b c d e f g
h i j k l m n
o p q r s t u
v w x y z

- Classical Arabic



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النَّطَاطِ الْعَرَبِي

- Is not usually spoken, but currently understood, by the population (like in every Arabic country),
- Used in





- Dialect



- The common language: a mixture of **classical Arabic**, **French** and others (**Spanish**, **italian** ...).

- Berber language

- Called also Tamazight include: chawi, muzabit, tergui, chenoui, kabyle.

- Exists also in Morocco, Tunisia, Egypt, Grand desert and Mauritania.

- French language

- The first foreign language (English is the second).

- It is taught from grade 3 to 12.

- Many institutions use French as a principal language or a parallel language with Arabic:



- There is also :



- Many inscriptions are written in Arabic and French:



- People understand French but do not speak it very well.
- The mastery and the support of French has decreased in last years among the population. Young people prefer English.

Spoken and written arithmetics

- In Arabic ← ← ←

Complete correspondence of writing with oral : 11 ...99.

23 61 TU

Different with hundreds and thousands

THTU

- In Berber → → →

Similar oral with Arabic which is a contradiction with writing.

- In French → → →

Contradiction with oral for 11 ...16

TU

- In Dialect

Same oral with Arabic

One of school mathematics reforms

- Because of university students difficulties in mathematics (taught in French), a school reform from grade 1, about 10 years ago, decided mostly by politicians, consisted of writing mathematics in Arabic and in French at the same time.

لتكن العبارة التالية

- $T = a^2 - b^2$

-

$T=0$ برهن ان

- This reform is still running so far.





Problems related to this reform

- It created many problems for the students from which sens ‘read the formulas’ like, $7-5=2$, $5-7=-2$, $a-b$ or $b-a$.
- Students are ‘programmed’ to consider in a text, only the formulas, and not the words, as being of mathematics value. This prevent them to read and understand the whole mathematical meaning; eg:
 - ✓ A train has left point A from 5 in the morning and reached point B at 8 in the night. How many hours did the train spend? 100% of children (grade 5 in an official national exam) responded 3 hours, not considering the mathematical meaning of the word ‘night’.
 - ✓ When half is written with letters instead of $\frac{1}{2}$, children ignore it as a mathematical data in an exercise
- Teachers focus more on the writing sens than on the learning competences; eg: when children are asked to order numbers from the smallest to the biggest, no credit is given for some children who do it from right to left, eventhought it’s correct.

Other difficulty about 'digit' and 'number'

- In English

1,...,9 are digits. All others are numbers

- In Arabic

- There are also 2 words: adad (number), rakm (1,...,9) which also means a set of digits to distinguish an object, an address, ...



- In French

- There are 3 words: (digit), nombre (number), numéro related to a set of digits (object, address, telephone,...).

- In Dialect and Berber

- There is just one word for all: numro

- Problems in mathematics about the words in Arabic and in French...



Mathematical teaching languages

- **During colonization**
- French was the only language for teaching (very few Algerians) and administration.
- Arabic was taught only in mosques and coranic schools.
- **After the independance (1962)**
- Teaching was in French till the 70's.
- After 70's, teaching became in Arabic ...till the recent reform.
- But...
- Exact sciences are still taught in French in universities.



Political and educational issues

- Political imposition of Arabic language for non Arabic population.
- Political imposition of French language as a parallel language.
- Mathematical learning difficulties for children using three to four languages (Dialect, Arabic, Berber, French).
- Teachers' scarce consciousness about these problems.
- Teachers' insufficient cultural, pedagogical and didactical preparation to deal with these problems and:
 - ✓ to take inherent identity issues into consideration.
 - ✓ to exploit inherent learning potential.



Teacher preparation

Teachers should be prepared to identify differences with their historical origins in order to:

- Develop students' mastery of mathematical basic notions by putting into evidence some deep aspects concerning them.
 - ✓ The difference of the Arabic order spoken-written of numbers (beyond hundreds) with other languages emphasises the importance of the hierarchy writing of numbers according to their grandeur.
- Contribute to initiate classroom discourses regarding cultural identity and mutual understanding on parity dignity level:
 - ✓ We belong to our past. Many things come from different origins.
 - ✓ Recognize the different origins.
 - ✓ Recognize in today's combination, the contribution of different cultures, but also the risk of loss of some concepts (like for numro in the dialect).